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The study identified what influence university laboratory attandance had upon cognitive and attitudinal dimensions of gifted secondary school students (IQ's above 125). Tests from the Guilford battery, a self concept scale, and an adaptation of the Coleman Attitude Scale were administered to both the laboratory and the secondary school populations (249 students). Results indicated few consistent differences on measures of divergent and convergent thinking, and no significant differences on measures of self concept. The following attitudinal differences in lab school groups were observed: the concept of intellectual self was significantly higher at the senior than the junior high level for boys (p .01); a substantial reduction in the positive image of the family occurred at the senior high level; and being active in school and popular with one's own sex was a better prestige symbol than athletics, heterosexual social activities, or material possessions. Further, in the lab school, a greater number of students expressed negative feelings about school or doubts about their own ability to do well. Sex and age differences are considered; specific results on attitudes and values are discussed. Disadvantages and advantages of both school settings are evaluated. Twenty-eight tables present data; a bibliography cites 23 items. (JD)

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James J. Gallagher

Institute for Research on Exceptional Children

University of Illinois

Compliments of Institute for Research
on Exceptional Children
University of Illinois
Urbana, Illinois

This project was supported, in part, by the Illinois Department for Program Planning for the Gifted, Office of the Superintendent of Public Instruction, Springfield, Illinois. 1965.

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Table of Contents

		Page
Acknowledgments		ii
List of Tables		iii
List of Figures		v
Summary		vi
I.	Background of the Problem	1
	Purpose	4
II.	Procedure	5
	Subjects	5
	Method	6
	Measuring Instruments	9
	Experimental Variable	11
	Hypotheses	12
III.	Results	14
	Cognition	14
	Self Concept	21
	Attitudes and Values	28
	Further Attitudes and Values-Boys	49
	Further Attitudes and Values-Girls	72
IV.	Discussion	95
	Cognition	95
	Self Concept	96
	Attitudes and Values	98
V.	References	104

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J.J.G.

List of Tables

Table		Page
1.	The Current Sample in Terms of Attrition	7
2.	Comparison of Lorge-Thorndike IQ Scores of Two Groups	8
3.	Measures of Intellectual Abilities	10
4.	Comparison of Laboratory and Public School Boys on Measures of Cognitive Abilities	15
5.	Comparison of Laboratory and Public School Girls on Measures of Cognitive Abilities	17
6.	Correlation Matrix for Measures of Cognitive Abilities	19
7.	The Self-Ratings of Laboratory and Public School Gifted Boys	22
8.	The Self-Ratings of Laboratory and Public School Gifted Girls	24
9.	Needed Characteristics for Popularity (Boys)	50
10.	Across Sex Popularity (Boys)	51
11.	Across Sex Socialization and Social Status (Boys)	53
12.	School Subjects Liked (Boys)	56
13.	Attitudes to School (Boys)	58
14.	Occupational Directions and Attitudes (Boys)	61
15.	Occupational Attractiveness (Boys)	63
16.	Parental Background and Family Attitudes	66
17.	Things Judged Important (Boys)	68
18.	Self Attitudes and Opinions for the Boys	70
19.	Factors Related to Popularity (Girls)	73
20.	Across Sex Socialization (Girls)	75
21.	Social Involvement and Interest (Girls)	77

List of Tables Cont'd.

Table		Page
22.	Subjects Liked Best in School (Girls)	79
23.	Honors and Attitudes to School (Girls).	82
24.	Occupations and Recreation Found Desirable (Girls).	84
25.	Things Judged Important (Girls)	86
26.	Television Preferences (Girls).	88
27.	Relationships with Family (Girls)	90
28.	Aspirations and Self Image (Girls).	92

List of Figures

Figure		Page
1.	Perception of Girls	29
2.	Perception of Boys	31
3.	Perception of Social Factors	33
4.	Attitudes to Self	37
5.	Occupational Choice for Men	39
6.	Attitude Toward Home Town and Future	42
7.	Political Preferences	45
8.	Attitudes About Teachers	47

SUMMARY

The problem of the influence of ability grouping on gifted students has irritated educators for decades. Despite one of the most voluminous bibliographies of any topic in educational research, the issues are still in doubt because (1) the usual research design which compared grouped and ungrouped students was defective due to biased selection of the samples (2) the most common variable measured were scores on achievement tests, a dubious criterion of educational success and (3) the treatment variables (what different activities were being used in the ability-grouped section) were poorly described, or not described at all. The purpose of the present study was to identify what influence attending a university laboratory secondary school had on the cognitive and attitudinal dimensions of gifted secondary students.

From 1959 to 1962 inclusive, a total of 366 students qualified for admittance to a university laboratory school at the junior high school level. During that four year period, the selection procedure followed by the school was altered. All qualified students (those with Lorge Thorndike IQ's above 125, with some exceptions, and high teacher recommendations) were placed in a selection pool. The choice of the limited number of students that could be accepted in the laboratory school was done by process of randomization (using a table of random numbers). This approach allowed the investigator to assume equality of the groups at the time of their separation into either the laboratory or regular school programs.

In June, 1964, all students who had been involved in this selection procedure were sought out. Of the 275 students then available, 249 took a battery of tests measuring aspects of cognition and attitude. A number of tests from the Guilford battery, a self concept scale and an adaptation of the Coleman attitude scale were administered. It was hypothesized that the laboratory school students would show more divergent thinking because of a presumed greater permissiveness in the laboratory school for intellectual adventure. It was further predicted that they would show greater liking for intellectual, as opposed to social interests, than would the gifted students attending the regular secondary schools. For purposes of analysis the groups were further divided by sex and junior-senior high levels.

The differences between the laboratory and secondary school populations were noted mainly in the attitudinal dimensions. A brief catalogue of the results follow:

1. On measures of divergent and convergent thinking, few consistent differences were found between the laboratory and regular school groups. On one test of convergent *thinking*, *Word Grouping*, results favored the regular school groups; on one measure of divergent thinking, Uses, the laboratory school boys showed some superiority. Overall, it was concluded that the different school environments in the present study did not substantially influence cognitive performance as measured by the tests used in the present study.

2. On a measure of self concept no differences of consequence were noted in comparisons between laboratory and regular school groups, but differences were noted comparing trends in junior and senior high groups.

3. In the laboratory school the concept of intellectual self was significantly higher at the senior high level than at the junior high level for boys. The opposite was true of the regular school boys! In that school environment the intellectual self concept of the boys was lower at the senior high than at the junior high level. These different trends were taken to mean that pressure for intellectual attainment was applied earlier in the laboratory school and consequently resulted in a downward self estimation earlier. The rising expectations for performance in the regular school program occurring somewhat later and so their concept of self was reduced at the senior high level.

4. There was a substantial reduction in the positive image of the family in the laboratory school groups at the senior high level, a finding that was not duplicated in the regular school population.

5. All groups agreed in perceiving the laboratory school environment as different from the regular school environment. This difference, as predicted, was noted in terms of the greater influence of athletics, heterosexual social activities and material possessions in achieving status in the regular school. Being active in school activities and popular with one's own sex, appeared a better prestige symbol for the laboratory school.

6. The apparently greater demands made on intellectual performance in the laboratory school (marked by more time spent on homework, among other things) resulted in a significantly greater number of students in that environment expressing negative feelings about school or doubts about their own ability to do well in school. Feelings of snobbishness or superiority were not found to any significant degree in the laboratory group. If anything, they appeared more humble about their own performance.

7. Most of the comparisons in which the laboratory school students were supposed to indicate a larger commitment to the intellectual life did not occur, and, in a number of instances, the results were diametrically opposed to what was expected. For example, laboratory school students expressed a greater interest in shop and physical education, were less inclined to use an extra hour of school on academic work, wished to seek out friendly co-workers in college rather than stimulating ideas, preferred business activities to more intellectual pursuits, etc.

The interpretation of these results was in terms of the lab school students having their fill and more of intellectual activities in their school program and thus tended to seek other types of experiences in their free time, while the gifted students in the regular program were still reaching out for intellectual experiences.

8. There appeared to be a dual culture in the regular school with the gifted students representing a minority group that had goals that were opposed to the dominant themes of the peer group, as they perceived them. The key question as to whether 'a boy would have to go against some of his principles to be in with the leading crowd' was answered mainly 'Yes' by the regular school gifted and predominantly 'No' by the laboratory school population.

9. There was evidence of some resistance of the gifted students in the regular school to the social and athletic emphasis of the regular school as noted by a greater tendency to wish to date the best student rather than the star athlete, to wish to be remembered in school as a brilliant student and to choose intellectual activities more often than the average high school student chose in previous studies. Both school groups said that in a conflict between their own values and those of the group they would prefer their own.

10. The different school environments apparently did have some influence on attitude in that the laboratory school students felt less of a necessity to be a part of the crowd and adopted a more generally liberal position in politics than the regular school students.

The total results indicated that different school environments do influence attitudes and values of gifted students, and this influence is greater than changes in cognitive abilities. In many aspects of the study, the students in either school environment continued to react as gifted students and chose the academic or intellectual alternatives more often than would be expected by the average student. At the same time, these findings suggest that closer attention be focused on the attitude-shaping role played by the school environment. One problem emerging from the present data is whether an intensive program almost exclusively devoted to intellectual excellence may not breed resentment or discouragement on the part of some gifted students, particularly those finding it difficult to face up to the greater competitive pressures that such a program engenders.

Which is the better educational environment for gifted students? Research cannot, by itself, answer such a question. It can only point out facts and measure the degree to which certain relationships occur. Educational researchers, however, have some responsibility to speak on this subject, making clear that such judgment springs from the value judgments of the investigator as well as from the data.

Both of the settings appear to have certain advantages and disadvantages for gifted students. The major problem of the regular school is how to protect the gifted student from the more transient and nonproductive values of the adolescent peer group (such as glorification of athletics and cheerleaders)

while keeping enough diversification in the program to allow for expressions of excellence in many directions. The problem of the laboratory school seems to lie in a program in which there is only one main road to status and success, the academic one. How can this school deal with those students who cannot compete on those terms, despite their superior academic aptitude?

School environment seems to be a significant variable that has to be included as one aspect of future studies of gifted children and their attitudes.

Background of the Problem

Some educational issues plague educators like a low-grade toothache. They come and go, but rarely have the staying power necessary to stimulate reform or remediation. Ability grouping is one of those issues. The developing field of the education of gifted children, has stressed ability grouping as one component of a total educational program and raised many of the old issues again.

A survey conducted by the Southern Regional Education Board (1962) after a nation-wide series of observations and visits, reported the following:

> Observers of special programs come quickly to the conviction that grouping students according to ability for at least pertinent portions of their school experience is eminently desirable at every grade level. The mere grouping of pupils does not make a program, nor does absence of grouping necessarily mean that a program is absolutely ineffective....ability grouping makes possible many teaching and learning experiences which cannot be accomplished in the typical classroom. This can be seen again and again in specially composed classes in all parts of the country. (p. 73)

The literature on ability grouping has been truly voluminous. It is difficult even to keep track of the many summaries that have been made of this literature (Miller & Otto, 1930; Turney, 1931; Whipple, 1936; Goodlad, 1960; Eckstrom, 1961; Goldberg & Passow, 1962 and Franseth, 1963). Even now, we can see the phenomenon of a thoughtful summary of the summaries by Shores (1964).

The usefulness of this great body of research, however, has been sharply limited by methodological flaws that seriously reduce or make

nonexistent the contribution to knowledge provided by many of these studies. These methodological weaknesses have been analyzed in detail by Passow (1962) but can be divided into three major areas.

The first of these areas involves sampling procedures. If one chooses the very best of available students for the special group, then who is left to provide an adequate control groups which provide a baseline as to what might have been accomplished in the regular program? Many of these studies were made after-the-fact, that is, after the ability grouping program had been established. This makes very difficult any valid attempts at evaluation of the program through control group comparison.

Another major limitation of these studies has to do with the measuring instruments. Most of these research projects have been content to evaluate the success of the ability grouping program by looking at 'school achievement.' This often ignores the stated purposes of the special education program which often projects such goals as 'increasing problem solving ability' or 'the ability to think creatively.' Such characteristics are hardly measured adequately by standard achievement tests, whose stock in trade are memory for facts. One example of this point was provided by Drews (1963) who made a comparison of 151 high ability 9th graders in special classes in English, designed to provide stimulation in thinking abilities, with a control population. The comparison of experimental and control groups showed little differences on standardized achievement tests but on less objective measures, the experimental group seemed to have an advantage. The teacher talked less in the special classes, students were observed to have better attitudes and there was less dominance of the class discussions by a few individual students.

Another substantial limitation on these studies has been that the

treatment variable has very often been poorly described. Obviously ability grouping is an administrative move and the key experimental variable consists either of the unique social or intellectual atmosphere initiated or the specific teacher-student interactions covered over a long period of time. Until a clear description is given of the treatment variable, it is hard to evaluate even the most positive results. Recent studies by Borg and his associates (1964), Enzmann (1963) and Halliwell (1963) have not added substantially to our knowledge in this field for the reasons stated above.

Investigations which explored the influence of ability grouping on the social and emotional development of the gifted students have been relatively infrequent. Byers (1961) reviewed the few studies available in this area and concluded that gifted students did not suffer socially or emotionally as a result of the ability grouping. These studies, limited by the factors noted above did not settle the issue of the developing attitudes and values of these students. Much of the reluctance of parents to involve their students in special programs has not been related to their concern about academic dimensions, but rather on the possible negative influence on the attitudes and values of the students who participate in such a program. They fear that the students may become snobbish, may feel superior, or that such an obvious recognition of their talent may generate hostility towards the superior students from average or below average students.

Recent studies have testified to the potential importance of the environment of the adolescent in the development of his attitudes. These results supplement evidence presented by older sociological studies by

Hollingshead (1949) and Havighurst & Taba (1949) that stressed the role played by the socially significant peer groups in the development of attitude and values.

There have been suggestions in this work that some of the dominant values of the peer society may be detrimental to the development of high status for intellectual endeavors. Tannenbaum (1962) investigated the attitudes of adolescents toward academic brilliance in 615 high school students in a New York City comprehensive high school. Among other findings, he determined that the combination of the brilliant-studious-nonathlete represented a most unfortunate student pattern in order of social desirability. Athletics was viewed as a high prestige activity and studiousness was not held against a person as long as he could combine his academic prowess with some type of athletic activity.

Coleman (1961) found in a study of 10 high schools of widely different backgrounds and area in the Chicago area, a consistent emphasis on social and athletic dimensions rather than the intellectual. In this respect, the high school society seemed to exist on its own with little or no ties to the adult world, making its own rules and naming its own heroes. It would appear important then, to further investigate what impact distinctly differing social environments might have on the developing attitudes, values and interests of gifted secondary school students.

Purpose

The purpose of this project was to identify differences in attitude, values and cognitive styles between a group of children randomly selected for admission to a special laboratory school in which programs were

designed for academically talented students, with gifted children who had applied for entrance to the laboratory school but were randomly rejected and who were now attending public high schools.

Procedure

Subjects

The subjects in this study were all academically talented students who had applied for admittance to a university laboratory junior high school from 1959 to 1962. Since more qualified students applied to this special school than could be accepted, there was an opportunity to solve the selection problem that limited the results obtained on previous samples.

According to previous agreement with the administration of the school, the selection procedure for admitting students to this school was modified for the four year period of this experiment. The purpose of this modification was to insure the random selection of the population so that the assumption could be made that two groups, the laboratory sample and the public school sample were not different from one another at the time of the selection procedure. A further assumption could then follow that any differences found at a future time would then be due to the differing environments of these two groups.

The following selection procedure was adopted over the four year period of the experiment.

1. All sixth grade students in the area were encouraged to apply for entrance to the laboratory school, an adjunct to a large state university.
2. Sixth grade teachers were asked to recommend students whom they thought would be good candidates for the accelerated academic program conducted at the laboratory school.

3. Promising students were invited to the school to take selection tests. A battery of group intelligence, reading and arithmetic tests were administered to this group.
4. Those students who did not possess the level of ability or achievement that would predict academic success in such an accelerated program were dropped from the group. The remaining students comprised a group that fell in the top 5% of intellectual ability (in a few instances, the top 10%) and who were good achievers.
5. The students who were considered qualified by a selection committee of staff members from the College of Education and the laboratory school were then placed in a common pool.
6. Each of these qualified students was then assigned a number and the students were chosen for entrance from a table of random numbers until the required number of spaces open in the school were filled.

Method

In the early spring of 1964, letters were sent to all of the students who had applied to the laboratory school from 1959 to 1962 and who had been placed in the random selection pool. Table 1 shows that of the 366 students in the original group, 275 had local addresses at the time of the 1964 contact. These students were invited to take a test battery consisting of measures of cognition and attitude. Motivation was provided by means of a payment of five dollars to each student in order to insure their cooperation outside school hours. For those students who were unable to attend the first testing, a second testing session was arranged. The success of this procedure can be judged by the excellent cooperation and high percentage of returns obtained from the sample.

Table 1

The Current Sample in Terms of Attrition

Sample Selection	Number
Original group membership	366
Original group with local address at time of retest	275
Those retested	249
Unable to take test though expressed willingness	10
No response	15
Outright refusal	1

68% of original group was retested.

91% of contacted students were retested.

Of the 275 students contacted, 249 took the test battery. Another ten students wished to take the tests but other circumstances and commitments prevented them from doing so. Fifteen students did not respond to the original request or followup letter. There was one outright refusal. As Table 1 indicates, 91% of the students contacted in the spring of 1964 cooperated and 68% of the original group was retested. There seemed to be no obvious reason to suppose that this comparatively minor attrition of 9% would substantially alter the random selection character of the groups, or that the students not now in the community represented some special subgroup that might alter the results.

Table 2

Comparison of Lorge-Thorndike IQ Scores of Two Groups

	Laboratory School			Public School		
	N	Mean	σ	N	Mean	σ
BOYS						
Verbal IQ	75	131.19	9.72	47	128.85	7.33
Non-verbal IQ	73	129.01	9.95	46	128.09	12.49
GIRLS						
Verbal IQ	62	131.55	8.93	67	131.24	7.34
Non-verbal IQ	59	125.98	10.74	66	126.27	10.36

Table 2 presents the available IQ data on the two samples by sex collected at the time of their application to the laboratory school. As can be noted by the Table, there were no differences between the laboratory

or public school groups on either verbal or nonverbal ability. This result would support the effectiveness of the random selection procedure used in the present study. These figures also confirmed the high academic aptitude of this group since their mean scores fell about two standard deviations above the mean on these tests. Since these scores were obtained on the Lorge-Thorndike group intelligence test, it is likely that they would obtain somewhat higher scores on measures of individual intelligence.

Measuring Instruments

The measures of cognitive ability in the present study were chosen to test the hypotheses predicting the response of the two groups to measures of divergent and convergent thinking. A recent publication (Guilford & Hoepfner, 1963) presented those tests which seemed to measure specific characteristics in the Guilford Model. Table 3 shows those measures chosen to test the hypotheses in the present study. The first three measures, Word Changes, Sequential Association and Word Grouping, were selected because they all purported to measure the intellectual operations of Convergent Thinking in the Guilford Model (1959). The other tests, Consequences, Uses and Plot Titles were selected to represent the operation of Divergent Thinking.

A scale designed to measure the attitudes, values and interests was adapted from previous work by Coleman (1961). This scale had proven valuable in a previous study of high school attitudes in distinguishing various attitudinal components in the ten high school samples in his study. A Sentence Completion test used in a previous study (Gallagher, 1965) was also included in the battery to give some indication of self-concept along the dimensions of physical, social and intellectual self.

Table 3

Measures of Intellectual Abilities (Guilford & Hoepfner, 1963)

Test	Example	Guilford Classification: Content	Operations	Products
1. Word Changes Must move from one word to the other by progressively changing one letter in the word.	set ___ ___ ___ ___ cry 1. day 3. say 2. dry 4. sat	Symbolic	Convergent Thinking	Systems
2. Sequential Association Must arrange so that all words are associated with those contiguous to it.	Indicate the best order for the following words: pen pig read write ___ ___ ___ ___	Semantic	Convergent Thinking	Implications
3. Word Grouping Must group words into a set number of groups so that all words are used.	blue cutter drawer heavy larger light Group I _____ Group II_____ Group III_____ Group IV _____	Semantic	Convergent Thinking	Classes
4. Consequences Must give as many consequences as possible to a specific proposition.	What would happen if everyone in the world were born deaf?	Semantic	Divergent Thinking	Implications
5. Uses Must give multiple uses for common objects.	How many uses can you think of for a brick?	Semantic	Divergent Thinking	Classes
6. Plot Titles Subject given a short story and asked to provide as many different plot titles to the story as he can.		Semantic	Divergent Thinking	Transformations

On those tests where some judgment was needed on the part of the scorer, such as the Uses, Consequences or Sentence Completion scale, every attempt was made to conceal the group identification of the student from the judge doing the scoring.

Experimental Variable

It was found in past investigations that differences in attitudes and values of students could be expected only by substantial environmental change. An opportunity for such an investigation was provided by the contrasting educational programs and environments presented in this study. The following statements represent descriptive portraits of the laboratory and public school environments that constitute the key variable.

Laboratory School Atmosphere. This school has served as an adjunct to the college of education for a large midwestern state university and has long been viewed by members of the community as a school especially designed for the education of gifted students. The school itself has become deeply involved with many new experimental curriculum projects such as the Physical Science Study Committee project, The University of Illinois Committee on School Mathematics program, and other experimental programs in English, social studies and science. There was virtually no aspect of the program that has remained untouched by the intellectual ferment stimulated by these major curriculum movements. It is the opinion of observers, that the intellectual aura of the school clearly overshadows the development in social and athletic dimensions. The school does not deliberately foster such a viewpoint but the great emphasis on intellectual discovery and experimentation together with a lack of emphasis on athletics and social areas has presented this portrait to the community. This description has been concurred in by the school principal, Dr. W. Shoemaker.

Public School Atmosphere. Students who were randomly rejected from the sample were attending public high schools in either of two community high schools. These two communities have had well-regarded secondary programs for some years, but it is only in relatively recent times that programs of ability grouping on content areas have been adopted. Within these programs of ability grouping, the differentiation of curriculum for the high aptitude groups is less distinctive than found at the laboratory school.

Observers of the local scene feel that social and athletic events do play a greater role in the students' lives and in this regard, these schools seem to represent a fairly typical example of the comprehensive high schools that attempt to develop the well-rounded student, where intellectual development is considered as one goal, but that social and physical development must be considered also. The gifted student in this school is in the minority, although many leadership roles fall to them, as in most such comprehensive schools.

Hypotheses

I. THE LABORATORY SCHOOL GROUP WILL BE SUPERIOR TO THE PUBLIC SCHOOL GROUP ON MEASURES OF DIVERGENT THINKING.

Rationale: The atmosphere of the laboratory school should be more conducive to inquiry, experimentation, cognitive adventure and the free expression of intellectual abilities. These students should appear superior on variables measuring this characteristic.

II. THE LABORATORY SCHOOL GROUP WILL NOT BE SUPERIOR TO THE PUBLIC SCHOOL GROUP ON MEASURES OF CONVERGENT THINKING.

Rationale: Traditional school programs attended by the random reject public school group stresses the importance of good reasoning ability and

systematic thinking and there should be little difference obtained between the groups on tests measuring this dimension.

III. THE LABORATORY SCHOOL STUDENTS WILL SHOW A GREATER INTEREST AND MORE POSITIVE ATTITUDE TOWARD ITEMS DEALING WITH INTELLECTUAL DIMENSIONS WHILE THE PUBLIC SCHOOL GROUP WILL SHOW A GREATER INTEREST AND MORE POSITIVE ATTITUDES TOWARD ITEMS STRESSING SOCIAL, ATHLETIC AND SUCCESS ACHIEVEMENT IN OUR CULTURE.

Rationale: The students attending the public high school will be more likely influenced by the predominant values of the peer society, which seem to place greater relative weight on the importance of social and athletic development. Thus, the laboratory schools should present the portrait of the intellectual and his interests, while the public school should present the portrait of the "well rounded" individual.

Results

The results of the present study are presented in three main sections. These sections comprise the findings in terms of (a) cognition, (b) self-concept, (c) attitudes and values.

Cognition.

Tables 4 and 5 show the comparison of the laboratory and public school gifted students on the tests measuring cognitive variables. Two of the hypotheses in this study suggested that the tests measuring divergent thinking might indicate a superiority for the laboratory school groups because of the supposed superior environment for expression of ideas and greater tolerance for intellectual adventure. The second hypothesis had suggested that there would be no differences in convergent thinking tests since the public school groups would presumably emphasize this skill to a greater extent than divergent thinking.

In Table 4, performance by the boys by junior and senior high groups indicates that there were few differences at statistically significant levels. In the senior high group, one difference was found at the .01 level in favor of the public school group on the test of Word Grouping. This test measured the ability of the student to take collections of words and organize them by class into one proper alignment. The direction of these results suggested that not only was the laboratory school senior high boys not superior on these tests, but were actually less able on this single measure of convergent skill. Other tests of convergent thinking, Word Changes, or Sequential Association, revealed no differences between the two school groups. At the junior high school level, there were no apparent differences in performance between the laboratory and public school boys.

Table 4

Comparison of Laboratory and Public School Boys on Measures of Cognitive Abilities

Variable	Junior High				Senior High			
	Laboratory School (N=24)		Public School (N=22)		Laboratory School (N=52)		Public School (N=23)	
	Mean	σ	Mean	σ	Mean	σ	Mean	σ
CA	167.04	6.05	171.82	7.56	188.90	11.16	195.26	6.06
Word Changes	15.38	3.21	15.09	2.45	14.87	3.38	15.87	1.91
Sequential Association	4.54	1.61	4.95	2.19	5.50	2.49	5.65	2.59
Word Grouping	28.08	5.08	28.00	6.47	28.94	7.50 **	34.91	6.54
Consequences Fluency	25.17	7.95	27.86	9.64	26.33	8.62	27.04	9.80
Consequences Breadth	15.21	3.19	15.91	3.89	16.19	4.36	16.39	3.53
Uses Fluency	35.58	9.48	37.55	12.06	36.40	10.05	32.36	11.64
Uses Breadth	19.08	3.31	19.05	13.66	21.04	3.75 *	19.17	3.49
Uses Flexibility	25.08	7.07	26.27	8.33	27.13	7.88 †	24.13	7.23
Plot Titles High	2.46	1.89 *	3.50	2.06	4.10	2.40	3.39	1.70
Plot Titles Low	9.42	4.11	9.95	5.05	9.60	4.95	8.78	4.19

† $p < .10$

* $p < .05$

** $p < .01$

In the area of Divergent Thinking, in which the prediction was made in favor of the laboratory school group, only three differences were found at a probability level of .10 or below. Two of these were in the predicted direction on the Uses test. The laboratory school boys at the senior high level scored significantly higher on the Uses-Breadth and Uses-Flexibility and this was in line with the prediction that their environment might be reflected by greater fluency and flexibility of intellectual output. The public school boys at the junior high level, however, produced more high quality Plot Titles and this was not in line with the original prediction. No differences were found on the Consequences test, at each level, nor on Uses-Fluency, Plot Titles of low quality. The direction of the results on Plot Titles of high quality at the senior high level, was more in line with the original prediction, but not statistically significant. Overall, the mean differences between the junior high and senior high samples can also be viewed as limited, supporting the general belief that CA does not play an important role in test performance at this level.

In summary, there was a tendency on one test at the senior high level to support the hypothesis that the laboratory school boys would be superior on Divergent Thinking, however, there were no differences found on other measures and no observable trends to support this hypothesis at junior high school level. In addition, differences were found in favor of the public school boys on one measure of Convergent Thinking at the senior high level and one measure of thought quality at the junior high level. As far as the results for the boys are concerned, the group differences seemed quite modest and suggested that the different environment in which the boys were operating had little substantial impact on the variables measured by tests of specific cognitive ability.

Table 5

Comparison of Laboratory and Public School Girls on Measures of Cognitive Abilities

Variable	Junior High				Senior High			
	Laboratory School (N=17)		Public School (N=51)		Laboratory School (N=44)		Public School (N=16)	
	Mean	σ	Mean	σ	Mean	σ	Mean	σ
CA	167.41	5.04	172.18	7.67	190.89	11.15	195.75	8.30
Word Changes	14.94	2.68 †	16.08	1.37	16.05	1.75	15.94	1.77
Sequential Association	5.41	1.94	5.27	1.91	5.93	2.13	5.25	2.57
Word Grouping	28.06	4.98 *	34.08	6.75	33.43	7.95	36.19	7.71
Consequences Fluency	24.41	5.31	28.04	9.30	27.18	5.78	30.69	8.11
Consequences Breadth	15.12	2.96	16.55	3.68	17.52	3.08	17.00	3.37
Uses Fluency	33.59	9.49	35.18	8.72	36.45	7.33	39.94	7.19
Uses Breadth	18.71	3.62	19.86	4.03	20.61	3.47	20.69	3.00
Uses Flexibility	24.82	6.95	26.22	7.95	26.89	6.38	28.31	6.33
Plot Titles High	2.88	1.83	3.53	2.11	4.57	2.35	3.69	2.65
Plot Titles Low	10.88	4.48	10.51	4.91	7.77	4.04 **	11.44	4.26

† $p < .10$

* $p < .05$

** $p < .01$

Table 5 shows the comparison of the laboratory and public school girls on measures of cognitive ability used in the present sample. At the junior high level, two differences were found at a probability below .10 level of significance. These differences were noted on the Convergent Thinking tests and were in favor of the public school gifted girls. The tests of Word Grouping, and Word Changes indicated a significant difference in favor of the public school girls. No differences were noted on the Convergent Thinking tests at the senior high school level, although the Word Grouping test showed a trend in favor of the public school girls over the laboratory school girls.

On the measures of Divergent Thinking at the junior high school level, no differences reaching statistical significance were found on the Uses or Consequences test, the standard measures of divergent thinking. Where trends could be noted, they seemed to run in favor of the public school girls. At the senior high level, one difference was found with the public school girls producing more Plot Titles of low quality than the laboratory school group. Other differences on the tests of divergent thinking at the senior high school were minimal.

In total, the prediction that the laboratory school girls would show superiority in divergent production was not borne out by these results. The public school girls at the junior high level did better on two measures of Convergent Thinking but not at the senior high level. As with the sample of gifted boys, the results were quite modest and the differences in test performance produced by differences in educational environment seem to be distinctly limited. The test of Word Grouping measuring the organization and classification of concepts did show a tendency to favor the public school students of both sexes and might suggest the results of different orientation in their school program.

Table 6

Correlation Matrix for Measures of Cognitive Abilities

GIRLS (N = 128)

Variable	1	2	3	4	5	6	7	8
1. Word Changes	1.000							
2. Sequential Assoc.	-.001	1.000						
3. Word Grouping	.083	.036	1.000					
4. Consequences Breadth	-.043	.054	.131	1.000				
5. Uses Breadth	-.051	.125	.108	.419	1.000			
6. Uses Flexibility	-.114	.127	.066	.516	.810	1.000		
7. Plot Titles High	.018	.184	.261	.291	.338	.354	1.000	
8. Plot Titles Low	-.078	.016	.051	.248	.316	.427	-.044	1.00

BOYS (N = 121)

Variable	1	2	3	4	5	6	7	8
1. Word Changes	1.000							
2. Sequential Assoc.	.280	1.000						
3. Word Grouping	.331	.212	1.000					
4. Consequences Breadth	.247	.184	.348	1.000				
5. Uses Breadth	.142	.256	.183	.405	1.000			
6. Uses Flexibility	.128	.214	.154	.530	.722	1.000		
7. Plot Titles High	.033	.055	.136	.310	.324	.246	1.000	
8. Plot Titles Low	.088	.151	.254	.360	.328	.462	.008	1.00

r = .31 at $p < .05$

Table 6 shows two correlation matrices for the measures of cognitive ability used in the present study, arranged by sex. The first three measures in the matrix represent the Convergent Thinking instruments while the remainder represent those purported to measure Divergent Thinking. In the girls sample, there were consistently positive correlations between the various indices of Divergent Thinking. While the indices, Uses-Breadth and Uses-Flexibility are not independent of one another, since both depend on total output of that test, the other measures still show moderately positive relationships. There seems to be little positive relationships between the measures of convergent and divergent thinking with the possible exception of a relationship between high quality Plot Titles and Word Grouping. There was no substantial relationship either among the three measures of convergent thinking in the girls' responses. This is a rather surprising result considering the fact that these were supposed to be measures of the same intellectual ability.

A slightly different protrait is shown in the intercorrelation matrix of the boys. There were positive correlations between the measures of divergent thinking as was found in the girls sample. The one exception to this statement was the lack of relationships between high and low quality Plot Titles. The same lack of relationships between these two variables can also be noted with the girls. The difference between the two sexes can be noted in the positive correlations between the measures of Convergent Thinking in the boys sample. One can also note a greater tendency to a positive relationship between the measures of convergent thinking and divergent thinking although they are of a low order. These results suggest a tendency for there to be a more general factor of intellectual cognitive ability evidenced by the boys and by the girls in the present sample.

Self-Concept

Table 7 shows the results obtained on the Sentence Completion Test for the gifted girls in the present sample. These results are divided into two major categories, Occurrence and Direction of Affect. Occurrence merely represents the number of times the concept itself is mentioned in the Sentence Completion responses. Since many of the Sentence Completion responses were open end items, there can be considerable variance in the incidence of comments on such an area of interest, as Family. The rating on affective dimension was on the use of the concept was determined by the use of judges' ratings from 1 to 7 in a negative to positive affect dimension. All of the items that are related to the area were collected together and the rating was made on the basis of the sum total of these items.

The self-reference score reported in Table 7 was added to the variables from the observation of considerable individual differences in this domain. These scores were obtained by counting the use of personal adjectives; I, me, myself, in the responses themselves. No statistically significant differences were obtained in the dimension of Occurrence, which would represent a preoccupation with a particular topic area, between laboratory and public school boys at the junior and senior high school level.

Differences were noted in the boy's sample related to direction of affect. At the junior high level, the public school boys had a more positive mean self-concept in the dimension of self-intelligence than did the laboratory school boys. However, at the senior high level, this trend was reversed with the laboratory school boys giving a higher rating of their intellectual abilities than was true of the public school boys.

Table 1

The Self-Ratings of Laboratory and Public School Gifted Boys

Variable	Junior High: Laboratory School (N=24) Mean	σ		Junior High: Public School (N=22) Mean	σ	Senior High: Laboratory School (N=32) Mean	σ		Senior High: Public School (N=23) Mean	σ
Occurrence										
Self reference	14.83	5.65		17.18	8.18	13.27	6.19		15.09	7.23
Self physical	1.54	.72		2.09	1.15	1.94	1.58		1.74	.86
Self intellectual/school	5.46	1.96		6.09	1.80	4.62	2.03		4.09	2.29
Self social	2.96	1.78		4.00	2.45	3.12	2.64		3.30	2.46
Family	4.13	1.30		4.68	1.25	3.63	.82		3.91	1.16
Achievement/work	5.88	2.74		6.27	2.27	5.52	2.21		5.57	2.09
Intellect/creativity	2.25	1.78		1.73	.98	2.42	1.42		1.87	1.14
Direction										
Self physical	3.71	1.52		2.95	1.43	3.54	1.65		2.96	1.36
Self intellectual/school	2.50	1.14	**	3.41	.91	3.60	1.09	*	2.87	1.39
Self social	2.58	.93		2.73	1.16	2.58	1.11		1.91	1.08
Family	4.13	1.85		4.32	1.70	2.98	1.41		3.61	1.83
Achievement/work	2.92	1.06	†	3.41	.66	2.90	.93		3.04	.71
Intellect/creativity	2.23	.75		2.32	.57	2.48	.64		2.57	.66

† $p < .10$
* $p < .05$
** $p < .01$

Junior to Senior High Differences	Direction of Change	
Laboratory School		
Self intellect/school	affect up	$p < .01$
Family	affect down	$p < .01$
Public School		
Self intellect/school	affect down	$p < .01$

Such a reversal spurs some rather interesting speculations. On the basis of previous research, which has suggested that a highly competitive situation can lower the self-concepts of gifted students, it could be inferred that the initial impact of the laboratory school tended to reduce the self-concept of gifted boys to a point where the public school youngster appeared superior on this dimension. This is an interesting result in terms of the recurrent suggestion that assignment to a special program might tend to inflate the ego of the gifted students. However, at the senior high level, the laboratory school boys appeared to take a much more positive attitude toward their own intellectual ability--perhaps becoming more conscious of their school's own reputation for intellectual excellence and adjusted their self-concept accordingly.

The public school gifted boys, however, showed a tendency to decrease their own image of self-intellectual ability from junior to senior high school. This difference may represent a delay in the effect of greater competition to the senior high level which, when it did occur, brought about the downward adjustment of self-assessment of their ability.

Another difference obtained at the junior high school level at the probability level of less than .10 was discovered in the attitude toward achievement and work. The public school youngsters had a more positive image of this concept than did the laboratory school students. This tendency suggested a negative reaction of the student to the competitive environment of the laboratory school. This difference was not noted, however, at the senior high level. The reason for this disappearance of such a difference was not based on a more positive rating by the laboratory boys, but due to a lowering of the positive rating by the public school boys. This again, suggested the lowering on the part of the public school gifted boys at the senior high school level.

Table 8

The Self-Ratings of Laboratory and Public School Gifted Girls†

Variable	Junior High				Senior High			
	Laboratory School (N=17)		Public School (N=51)		Laboratory School (N=44)		Public School (N=16)	
	Mean	σ	Mean	σ	Mean	σ	Mean	σ
Occurrence								
Self reference	16.76	8.83	18.22	6.80	19.55	8.44	16.81	5.26
Self physical	2.06	1.30	2.04	1.26	1.98	1.45	2.19	.98
Self intellectual/school	5.29	2.76	5.92	2.16	4.93	2.02	4.88	1.50
Self social	4.29	2.87	4.20	1.84	4.20	2.82	4.31	2.47
Family	4.88	1.73	4.80	1.52	5.00	2.48	4.06	1.18
Achievement/work	5.53	2.12	6.08	2.07	5.70	2.34	4.88	1.59
Intelligence/creativity	1.71	.69	2.16	1.14	2.68	1.93	2.56	1.26
Direction								
Self physical	3.59	2.03	3.37	1.56	3.91	1.64	3.25	1.81
Self intellectual/school	3.18	1.24	2.63	1.20	2.84	1.14	2.94	1.34
Self social	2.71	1.21	2.55	1.30	2.82	1.19	2.81	1.38
Family	4.59	1.62	4.39	1.81	3.70	1.79	4.25	1.81
Achievement/work	2.82	.81	2.98	.91	2.68	1.07	3.00	.97
Intelligence/creativity	2.24	.44	2.33	.55	2.77	.80	2.69	.60

† No differences between groups at .10 level or beyond.

Junior to Senior High Differences

Laboratory School	Direction of Change		
Intellect-creativity	occurrence	up	$p < .01$
Intellect-creativity	affect	down	$p < .01$

Public School	Direction of Change		
Self intellect/school	occurrence	down	$p < .05$
Achievement/work	occurrence	down	$p < .05$
Intellect/creativity	affect	up	$p < .05$

Since a rating of 3.5 would represent the middle point of the scale in terms of affect, most of these ratings lean to the negative end of the scale. This tendency is due partly to the structure of the test itself which lends itself to negative statements (Stems like: 'I worry most about ____.,' etc.) Some differences noted between the performance of students at the junior and senior high school level are worth comment. In the laboratory sample, the senior high school group showed a significantly more positive rating of Self-intellectual concept related to school affairs, and a significantly less positive rating of Family. This disenchantment with Family can be seen in more detail in the section on attitudes and values. Although there was a tendency in the public school boys to also show a slight reduction in their junior high school positive attitude toward Family, it did not take the degree of difference that was seen in the laboratory school boys.

Table 8 shows the self-ratings obtained on the laboratory and public school gifted girls at both the junior and senior high school level. No statistically significant differences were obtained between the laboratory or public school girls at either the junior high or senior high level in either of the dimensions of Occurrence or Affect of Direction. On most of the variables, the mean differences were so negligible as to even discount the possibility of trend. Whatever the influence of the separate educational environments, it did not seem to have a substantial impact on the self-ratings of these girls on the Sentence Completion Test used in the present study.

The most positive attitudes in terms of affect direction at the junior high school level were seen in Family and Physical Self, with less positive ratings on Achievement, Creativity and Social Self. These same general

relationships held at the senior high school level also, although the Family received somewhat less positive ratings than at the junior high school.

There were a few differences between junior and senior high school groups. In the laboratory school, there was a significantly higher rating for the area of Intelligence-Creativity in the senior high girls than in the junior high girls. In the public school group, there was a similar change in affect direction in terms of a more positive image of Intelligence-Creativity. Also in the public school group, there was a significant decrease in the occurrence of items in the self-school intellect area and achievement-work area, suggesting less concern or interest in these areas.

Overall, the results obtained from the Sentence Completion scale suggested that the differing educational environments of the two school settings had some impact on the self-ratings of the gifted boys but little influence on the gifted girls. The difference with the laboratory school gifted boys was emphasized by a low self-rating in intellectual dimension at the junior high level followed by an improvement at the senior high level, while the reverse trend was noted with the gifted boys in the public school setting. One tentative explanation for these differences was that the intellectual competition met at the laboratory school at the junior high school level, tended to reduce the self-concept of the gifted boys. This type of competitiveness was not met by the public school gifted boys until the senior high school, at which time, they too showed a decrease in their own self-attitudes.

Significant changes from the junior to senior high school level consisted of a sharp decrease in positive attitude toward Family in the laboratory

school boys and a sharp increase in the attitude toward intellectual matters related to creativity in both the laboratory and public high school girls from junior to senior high school. As far as these ratings are concerned, the influence of school environment such as it is, seems to bear more heavily on the boys than on the girls.

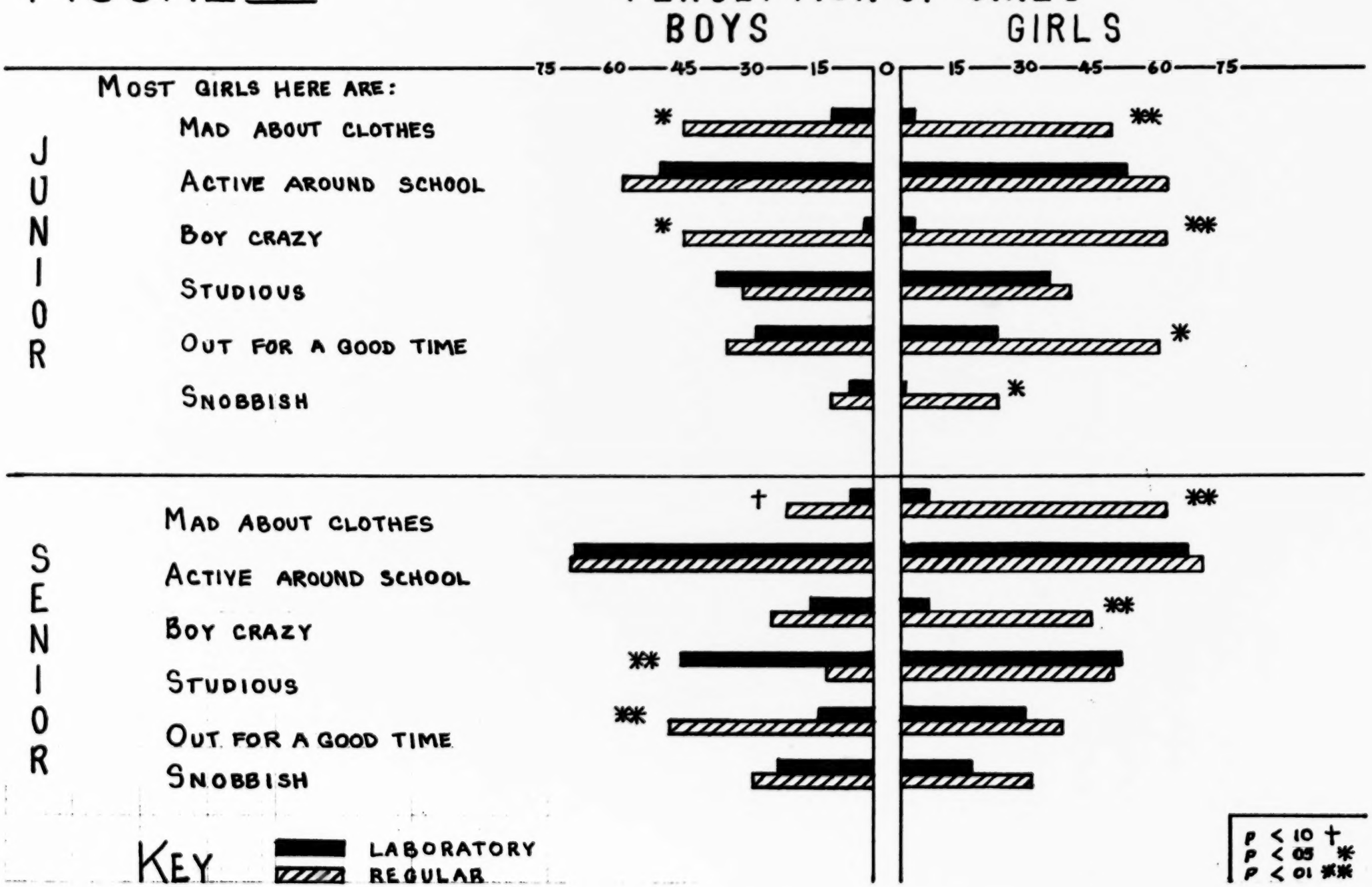
Attitudes and Values

This section of the results presents the findings obtained through the analysis of the adaptation of the Coleman questionnaire. They are reported in terms of items answered by both sexes, with separate sections for each sex.

Figure 1 shows the results obtained in the present sample on the preception of Girls in the groups by sex, level and school. The bar graphs represent the percentage of students agreeing with the statement, with the boys results reported on the left side of the graph and the girls responses on the right. The total results of Figure 1 give clear indication as to the different social environments perceived by the students in the two school settings. There was substantial agreement between boys and girls at the junior high school level that regular school girls, are more 'mad about clothes', and 'boy-crazy'. Almost one-half of the respondents agreed to these statements in the regular school groups while less than 15% of the students in the laboratory school groups at either level responded in this way about girls.

The gifted girls in the regular school reported at a statistically significant level that girls are more 'out for a good time' and are more 'snobbish.' These results would appear to support the notion that there is a social environment placing emphasis on the heterosexual socialization in the regular school setting that does not exist as an important factor in the laboratory school setting. The junior high boys in the public school also agreed more with this statement but the difference did not reach statistical significance. No differences were noted in the perception of either sex on the characteristic of 'studiousness' or in being 'active around school'.

FIGURE 1

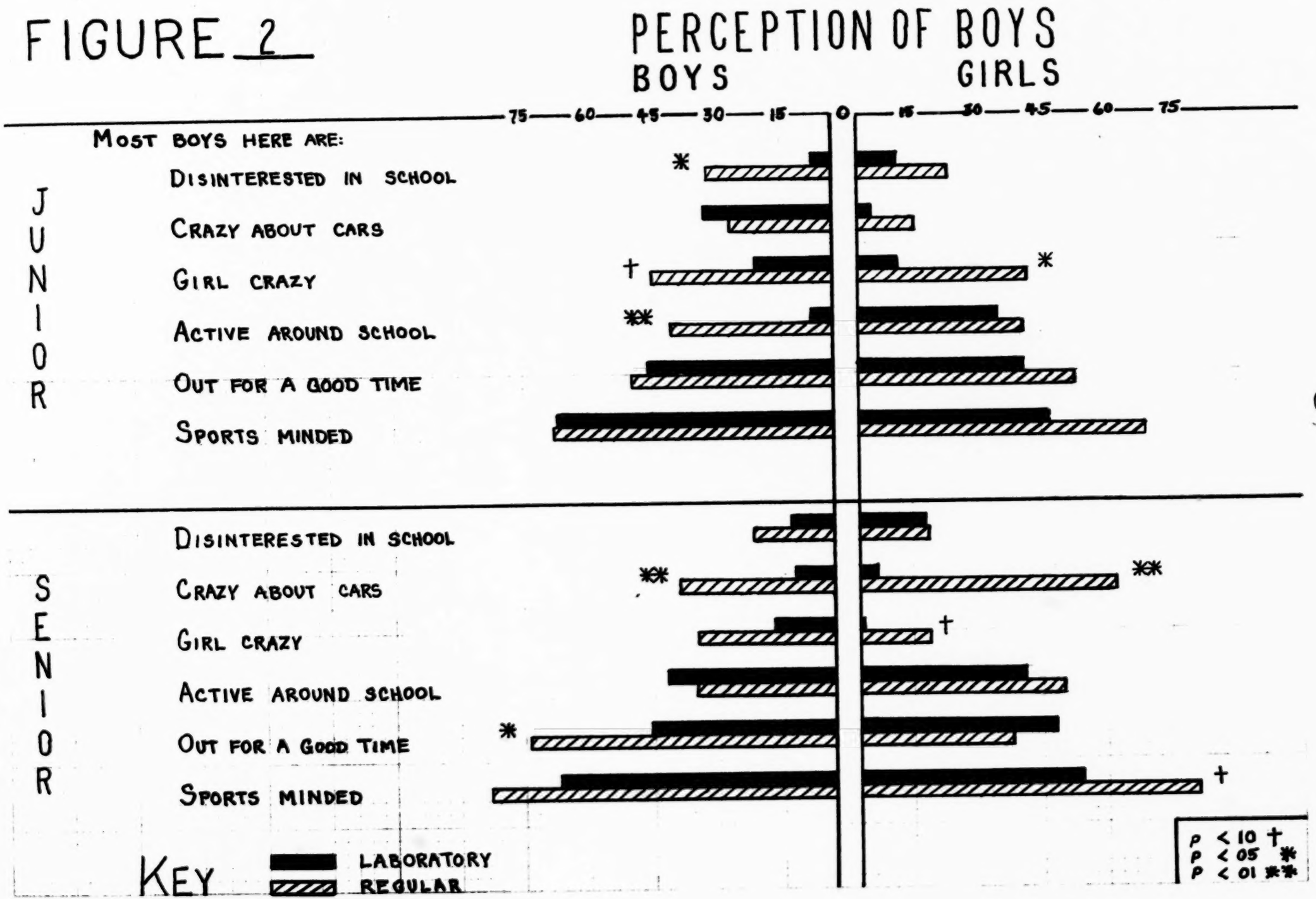

PERCEPTION OF GIRLS
BOYS
GIRLS
75 60 45 30 15 0 15 30 45 60 75
MOST GIRLS HERE ARE:
JUNIOR
MAD ABOUT CLOTHES
ACTIVE AROUND SCHOOL
BOY CRAZY
STUDIOUS
OUT FOR A GOOD TIME
SNOBBISH
SENIOR
MAD ABOUT CLOTHES
ACTIVE AROUND SCHOOL
BOY CRAZY
STUDIOUS
OUT FOR A GOOD TIME
SNOBBISH
KEY
LABORATORY
REGULAR
P < 10 †
P < 05 *
P < 01 **

At the senior high level, similar trends can be noted. Girls are still rated by the regular school girls as being 'mad about clothes' and 'boy-crazy' although the boys in the regular senior high school do not seem to believe this statement as much at this level as at the junior high level. On the other hand, the senior high boys felt that the girls are 'out for a good time' while the boys in the laboratory school rated Girls significantly more 'studious' than did the boys in the regular senior high program. No differences on the characteristic of 'snobbishness' was noted although more of this characteristic was by both boys and girls at the senior high level than at the junior high level.

The total portrait indicates (and one may note the extraordinary agreement between both of the sexes on the concept of Girls) was that the girls in the regular school were more interested in the opposite sex and in material possessions, perhaps at the expense of studiousness. It is interesting to note in passing, that one of the suspected problems related to assigning gifted youngsters together is the fear that they would become snobbish. In no case did the laboratory school youngsters rate highly on this factor and when a statistical significance was found, it was in the perception of Girls being more snobbish by the regular school students.

Figure 2 shows the ratings in terms of perception of Boys in their school. As in the perception of the concept of Girls, perception of Boys showed significant differences from one school setting to the other. At the junior high level, the regular school boys rated Boys as being more 'disinterested in school' and more 'girl-crazy' and more 'active around school' than did the boys attending the laboratory school. No differences between groups at the junior high level was found between Boys being 'sports minded', 'out for a good time', or being 'interested in cars.'

FIGURE 2


PERCEPTION OF BOYS
BOYS
GIRLS
75
60
45
30
15
0
15
30
45
60
75
MOST BOYS HERE ARE:
JUNIOR
DISINTERESTED IN SCHOOL
CRAZY ABOUT CARS
GIRL CRAZY
ACTIVE AROUND SCHOOL
OUT FOR A GOOD TIME
SPORTS MINDED
SENIOR
DISINTERESTED IN SCHOOL
CRAZY ABOUT CARS
GIRL CRAZY
ACTIVE AROUND SCHOOL
OUT FOR A GOOD TIME
SPORTS MINDED
KEY
LABORATORY
REGULAR
P < 10 †
P < 05 *
P < 01 **

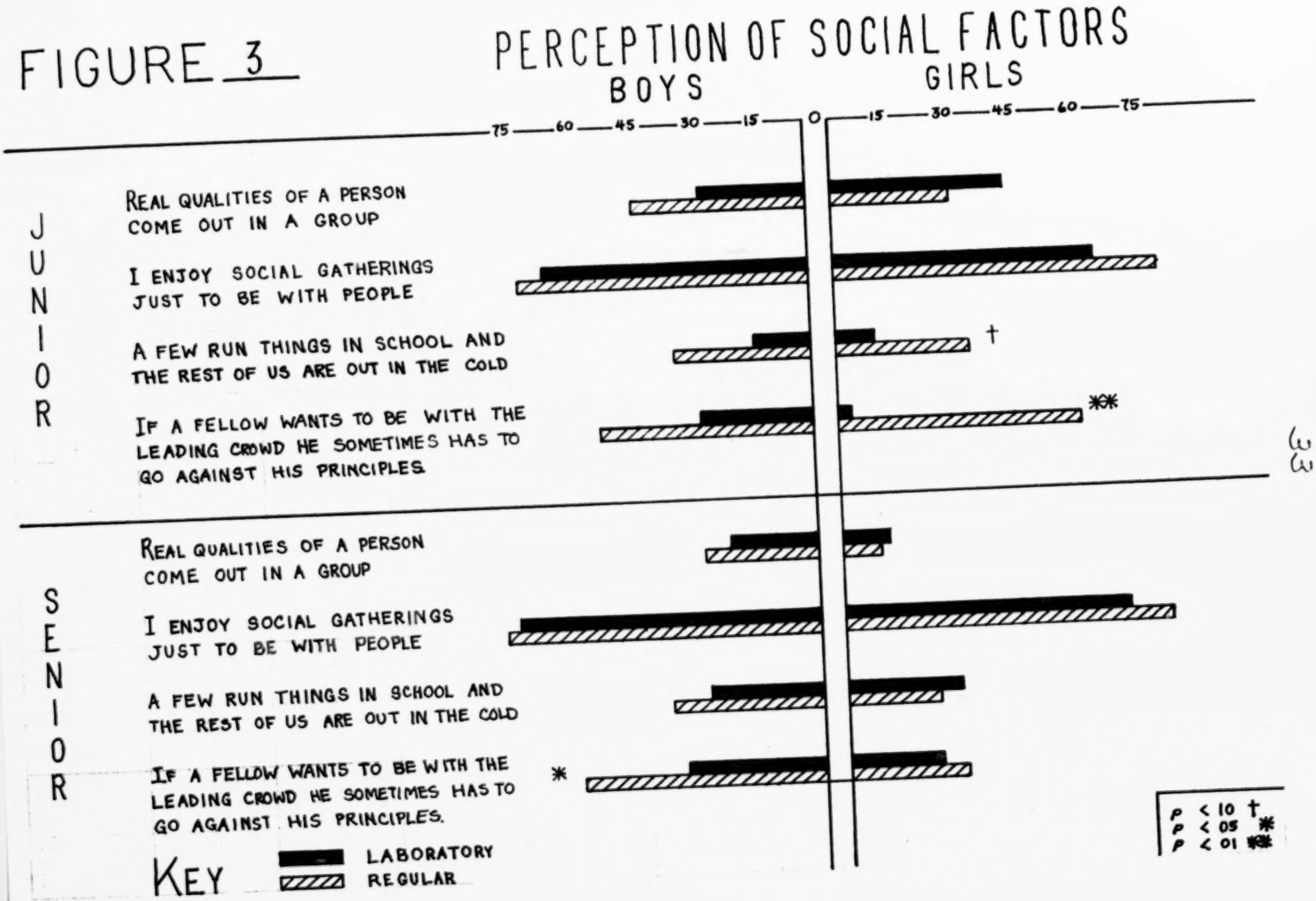
The junior high girls revealed the same general tendencies in their perception of Boys but these attained a level of statistical significance on only the factor of 'girl-crazy.' Both sexes, thus agreed, that in the regular school setting, boys are 'girl-crazy' and girls are 'boy-crazy.' There is little doubt that the heterosexual social activities are playing an important role in the regular school environment and that this influence remains at a low level in the junior high laboratory school program.

Figure 2 shows that the girls in both schools agreed that Boys are generally 'sports minded', 'out for a good time' and 'active around school.' At the senior high level, Figure 2 shows agreement of both the gifted boys and girls in the present sample that Boys in the regular school are significantly more 'crazy about cars' than are the laboratory school Boys. The ratings on the variable of 'girl-crazy' also appeared more frequently with the regular school students although this factor was rated less frequently at the senior high than at the junior high level. This reduction suggests that after an initial rather undisguised interest in the opposite sex, there was either a dimmunition or at least a more sophisticated approach to the opposite sex.

The senior high boys perception of Boys showed that a significantly greater proportion of the regular school boys were 'out for a good time' but this rating was not confirmed by the girls who instead saw Boys having a greater tendency to be more 'sports minded' than did the girls in the laboratory school setting.

Figure 2 shows that surprisingly few students reported that Boys were 'disinterested in school.' About one-half of all the respondents agreed that Boys were 'active around school.' These results follow rather closely

FIGURE 3


PERCEPTION OF SOCIAL FACTORS
BOYS
GIRLS
75 60 45 30 15 0 15 30 45 60 75
JUNIOR
REAL QUALITIES OF A PERSON COME OUT IN A GROUP
I ENJOY SOCIAL GATHERINGS JUST TO BE WITH PEOPLE
A FEW RUN THINGS IN SCHOOL AND THE REST OF US ARE OUT IN THE COLD
†
IF A FELLOW WANTS TO BE WITH THE LEADING CROWD HE SOMETIMES HAS TO GO AGAINST HIS PRINCIPLES.
**
SENIOR
REAL QUALITIES OF A PERSON COME OUT IN A GROUP
I ENJOY SOCIAL GATHERINGS JUST TO BE WITH PEOPLE
A FEW RUN THINGS IN SCHOOL AND THE REST OF US ARE OUT IN THE COLD
IF A FELLOW WANTS TO BE WITH THE LEADING CROWD HE SOMETIMES HAS TO GO AGAINST HIS PRINCIPLES.
*
KEY
LABORATORY
REGULAR
p < 10 †
p < 05 *
p < 01 **

the initial assumption of different school environment. A greater interest by the regular school boys in cars, girls and being sports minded, suggested that the greater emphasis on social and material aspects of the culture are reflected in this setting.

Figure 3 shows the relative proportions of the students in the two school settings divided by level and sex on items related to social background. At the junior high school level, statistically significant differences were obtained only with the girl respondents. The girls in the regular school setting, agreed at a high level of significance, with the statement, 'if a fellow wants to be with a leading crowd, sometimes he has to go against his principles.' Sixty-one percent of the high school girls agreed with that statement in contrast to only 6% of the girls in the laboratory school. A modest difference at the junior high level was also found with the regular school girls agreeing more frequently with the statement that 'a few people run things in the school while the rest of us are out in the cold.' This statement may reflect the different size in the schools rather than the peculiarities in the social environment. The regular schools being attended by the students in the present sample were significantly larger institutions than the laboratory school. Girls in both the school settings generally agreed that they enjoyed social gatherings to be with people, and agreed to a lesser extent, that the real qualities of the person will come out in the group.

Although Figure 3 shows that the boys in both settings at the junior high school level reveal the same general pattern of responses of the girls, their group differences did not reach accepted levels of statistical significance. It can be noted that 54% of the boys in the regular schools also agreed that

a person sometimes has to go against his principles to be in the leading crowd, while only 30% of the laboratory school boys agreed with that statement. Both groups also showed general agreement with the statement that they enjoyed social gatherings just to be with people.

At the senior high level, only one statistically significant difference between groups was found: again on the statement of the necessity for going against one's principles in order to be in the leading crowd. At this level, it was the senior high regular school boys who agreed that this was more true in their school rather did the laboratory school boys. The senior high girls, on the other hand, revealed no differences on this statement. Some decrease at the senior high level by all groups was found in agreement with the statement that the real quality of a person comes out in the group. However, little change was found at the senior high level in the high positive agreement with the statement that they enjoy social gatherings just to be with people.

There was no tendency noted in the laboratory school youngsters to reject the social contacts as might have been expected. About the same proportion of regular school senior high school students agreed that 'a few persons lead the school and the rest are out in the cold' however the differences are no longer significant due to a higher proportion of the senior high laboratory school girls agreeing with that statement.

In general, it can be seen that some differences in the perception of social factors in the school setting exist between the present groups. The most interesting of the differences seem to lie in the resignation of the regular school students in the necessity for compromising one's principles in order to be in the leading crowd. This resignation intimated that the influential groups in their school sponsor values that are in conflict with

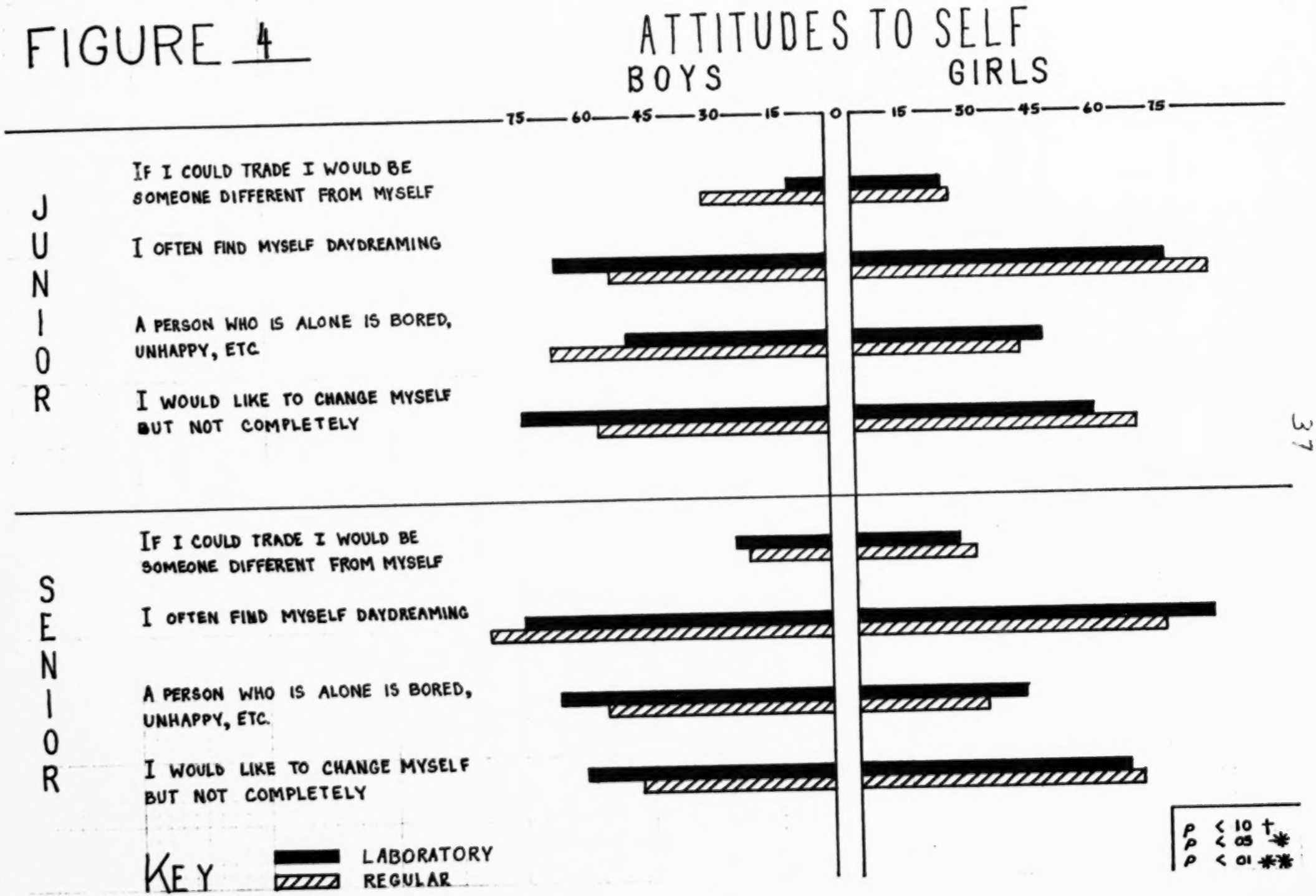
individual values forcing some difficult decision-making on the part of the gifted student. Since this statement was not agreed to by any substantial number of laboratory school students either by level or sex, it suggested in turn, that the values of the leading crowd in the laboratory school was not antagonistic to the standards held by the individual.

The report of the two groups on the social environment revealed in Figures 1 through 3, confirmed the suspicion of the different social settings in which these students operate. What needs to be established, however, is whether these differences in social environment had, in turn, influenced their attitudes toward themselves or to the world. Figure 4 shows the attitudes toward self revealed by the sample in the present study. No statistically significant differences were found either by level or by sex. The differences resulting from the differing social environment apparently had more influence on the social and academic perceptions of the students than on the internal perceptions of self.

The same proportion (about one fourth) of students in the present sample, at both the junior and senior high levels, reported they would like to be someone different from themselves. These proportionate figures agree closely with those obtained in the Coleman study.

About three-fourths of all of the sample agreed with the statement, 'I often find myself daydreaming.' No differences were found by group on this factor despite previous expectations that the laboratory school group would accept this comment more frequently. Surprisingly enough, the boys agreed with the statement, 'The person who is alone is bored and unhappy.' more than the girls of both groups. Since girls are traditionally supposed to be more socially oriented, it has been suspected that they would answer this question more in the affirmative than the boys.

FIGURE 4


ATTITUDES TO SELF
BOYS
GIRLS
75 60 45 30 15 0 15 30 45 60 75
JUNIOR
IF I COULD TRADE I WOULD BE SOMEONE DIFFERENT FROM MYSELF
I OFTEN FIND MYSELF DAYDREAMING
A PERSON WHO IS ALONE IS BORED, UNHAPPY, ETC.
I WOULD LIKE TO CHANGE MYSELF BUT NOT COMPLETELY
SENIOR
IF I COULD TRADE I WOULD BE SOMEONE DIFFERENT FROM MYSELF
I OFTEN FIND MYSELF DAYDREAMING
A PERSON WHO IS ALONE IS BORED, UNHAPPY, ETC.
I WOULD LIKE TO CHANGE MYSELF BUT NOT COMPLETELY
KEY
LABORATORY
REGULAR
p < 10 †
p < 05 *
p < 01 **

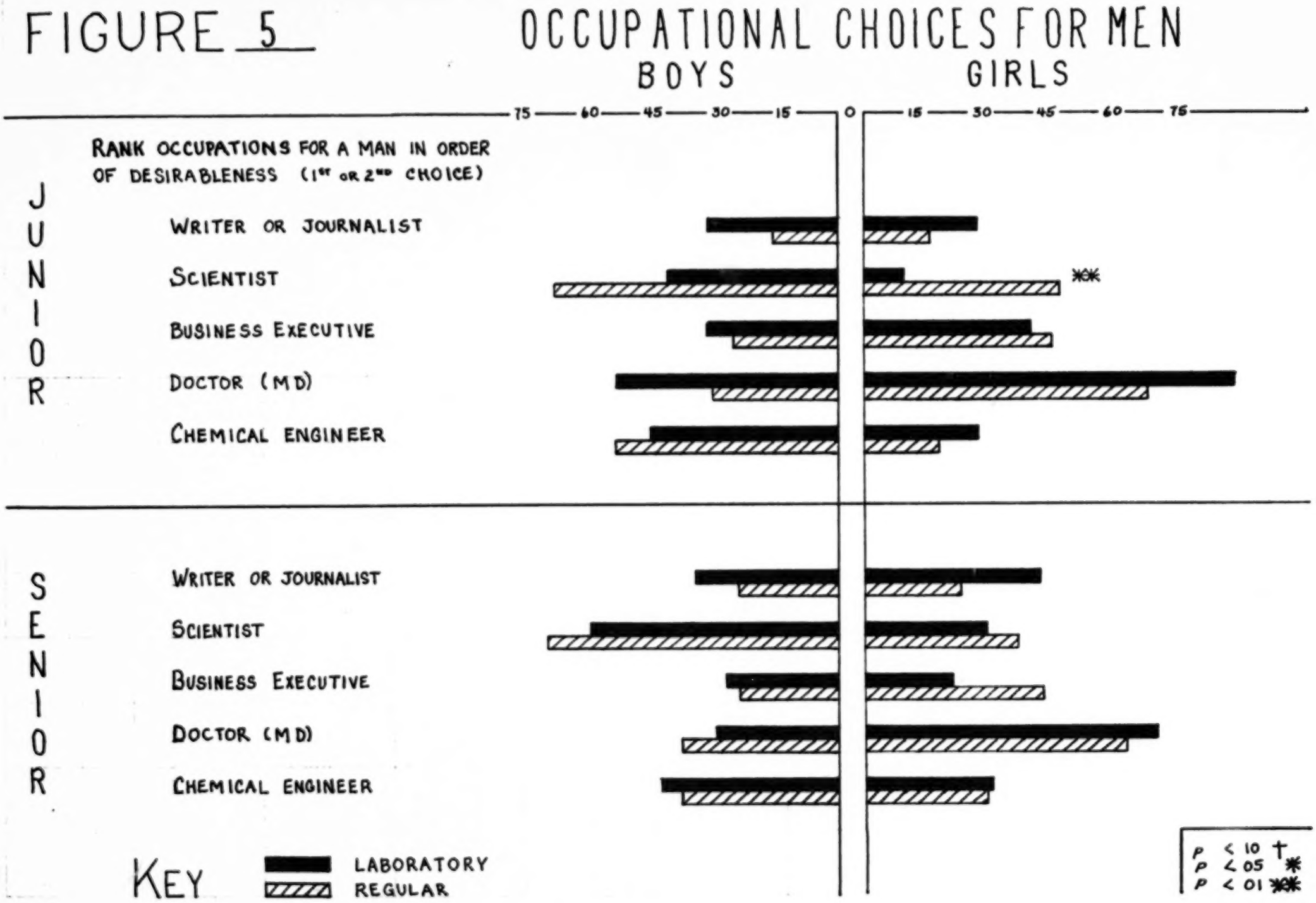
The majority of both groups, accepted the opportunity to make mild changes in themselves. This was true at both levels and sexes. In general, the samples in both the laboratory and public school environments, seem to agree that it would be good to make minor changes in one's self but would generally not trade their life with someone else. They admitted to frequent day dreaming and the boys showed a tendency to agree that a person who is alone is bored and unhappy, more than the girls, although a substantial number of students at all levels did agree with this statement. The different social environment did not, in this instance, result in differing attitudes toward the self.

Figure 5 shows the ratings of the students in the present study on occupational choices for men in terms of desirability. The students were asked to rank the occupations in order of preference and the percentage figures presented in the graph represent the number of students who chose that occupation as either their first or second choice. Consequently, these percentage scores, are not entirely independent of one another.

On the basis of prior expectations, the author expected the laboratory students to show a preference to the writer-journalist or scientist while the public school students were expected to show preference for the business executive or physician. These expected results were not obtained, although some trends in this direction may be noted at the senior high school level.

The laboratory school boys at the junior high school level chose physician as their top choice, with chemical engineer and scientist closely following. The writer-journalist or business executive recieved the fewest choices from the laboratory school group but the choices for the writer-journalist in this group still exceed those chosen by the regular school boys. The regular school junior high school boys showed a high preference for the

FIGURE 5


OCCUPATIONAL CHOICES FOR MEN
BOYS
GIRLS
75 60 45 30 15 0 15 30 45 60 75
RANK OCCUPATIONS FOR A MAN IN ORDER OF DESIRABLENESS (1ST OR 2ND CHOICE)
JUNIOR
WRITER OR JOURNALIST
SCIENTIST
**
BUSINESS EXECUTIVE
DOCTOR (M D)
CHEMICAL ENGINEER
SENIOR
WRITER OR JOURNALIST
SCIENTIST
BUSINESS EXECUTIVE
DOCTOR (M D)
CHEMICAL ENGINEER
KEY
LABORATORY
REGULAR
p < 10 †
p < 05 *
p < 01 **

occupation of scientist with chemical engineer second with less preference for physician and business executive, and fewest of all for writer-journalist.

The junior high school girls choices for desirable occupations for men in both schools rated physician very high with business executive rated relatively high. The only statistically significant difference in terms of occupational desirability was seen in the rating of the occupation of scientist. The laboratory school girls showed a definite lack of preference for this occupation which was held in rather high regard by the gifted girls in the regular school. No difference was shown in the preference for writer-journalist, although the laboratory school girls showed a slight preference over the regular school girls.

At the senior high level, no statistically significant differences were obtained in desirability of the various occupational choices between the laboratory or public school groups for either boys or girls. There can be noted, however, a substantial realignment of popularity of these occupations from the junior to the senior high level in both school settings. The occupation of scientist received a much higher preference at the senior high level among the boys in the laboratory school with the remaining occupations rather evenly spread among physician, chemical engineer and writer-journalist with the business executive getting the least proportion of high choices among the five occupations noted. The physician definitely lost status in the senior high school group when compared with his position at the junior high boys in the laboratory school setting.

The rating of the regular school gifted boys at the senior high level remained in reasonable agreement with the preferences at the junior high school level with scientist maintaining first place and business executives and writer-journalist surprisingly chosen least often.

Among the senior high girls, the occupational choice of physician remained in high regard with the regular school girls choosing the occupation of business executive as second, with writer-journalist a poor last. In contrast to this ordering of these occupations, the laboratory school girls chose writer-journalist as second in desirability to physician and rated business executive as having the least preference.

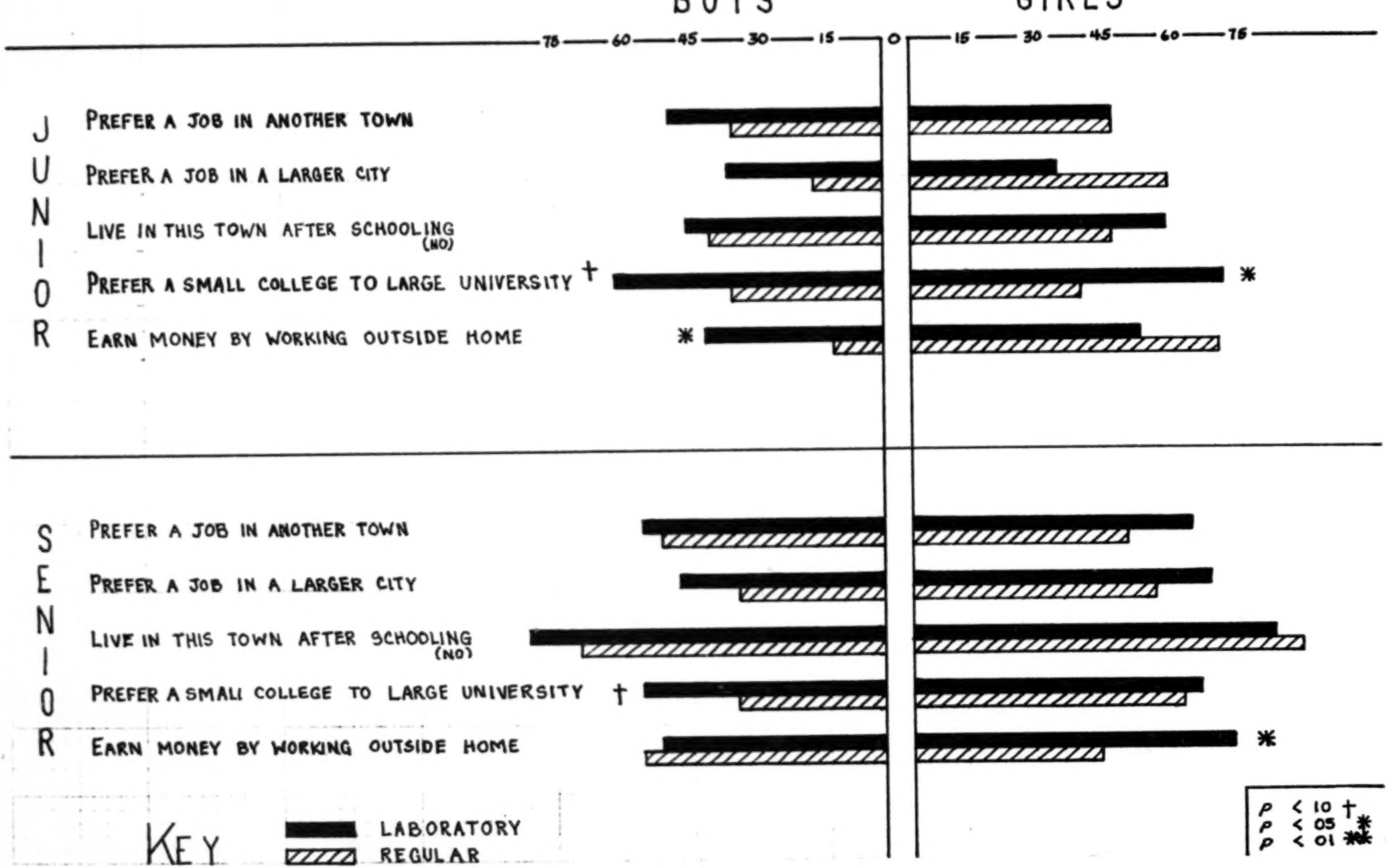
Thus, in summary, although few statistically significant differences were obtained, the trend of the results, particularly at the senior high school level, supported the basic hypothesis of the study that different environments might have an influence on the relative desirability of occupational preferences in the two groups.

Figure 6 reveals the expressed attitudes of the students in the present study toward the home town and future plans. The major point to the questions asked in the present figure was whether the student had an inclination to stay in his home town or leave for more attractive environments. The type of college they would like to attend is related to these preferences since there is a large university in their home town.

At the junior high school level, significant differences were obtained with the laboratory school group in both sexes preferring a small college to a large university. The junior high school boys at the laboratory school also reported significantly greater incidence of earning money by working outside the home than did the public school boys.

A high percentage of girls in both school settings answered this question 'yes', and this suggested that the lucrative profession of baby sitting has provided a source of income for girls that was not available to the boys in the community.

FIGURE 6 ATTITUDE TOWARD HOME TOWN & FUTURE


BOYS
GIRLS
75 60 45 30 15 0 15 30 45 60 75
JUNIOR
PREFER A JOB IN ANOTHER TOWN
PREFER A JOB IN A LARGER CITY
LIVE IN THIS TOWN AFTER SCHOOLING (NO)
PREFER A SMALL COLLEGE TO LARGE UNIVERSITY †
EARN MONEY BY WORKING OUTSIDE HOME *
SENIOR
PREFER A JOB IN ANOTHER TOWN
PREFER A JOB IN A LARGER CITY
LIVE IN THIS TOWN AFTER SCHOOLING (NO)
PREFER A SMALL COLLEGE TO LARGE UNIVERSITY †
EARN MONEY BY WORKING OUTSIDE HOME *
KEY
LABORATORY
REGULAR
p < 10 †
p < 05 *
p < 01 **

About one-half of the students in both groups at the junior high level and of both sexes, report that they would prefer a job in another town but the girls seemed more willing to take a job in a larger city than did the boys. Fifty-nine per cent of the regular school girls preferred a job in a larger city, against only 18% of the gifted boys in the regular school.

On the basis of these findings, about one-half of the students want to live in their home town after their schooling has been completed. Note that the proportions on these questions changed rather dramatically at the senior high school level for both school settings. At the senior high level, the vast majority of these students did not want to live in their home town after their schooling is finished. Since all of these students represent a high level of intellectual talent, there would appear in prospect, a substantial talent drain in the community itself. In line with the above results, a slightly larger proportion of students now appear at the senior level, ready to prefer a job in either a larger city or another town.

At the senior high level, a statistically significant difference was found with the laboratory school boys showing a greater preference for small college to a large university and this finding agreed with junior high school results. Whether this preference represented a favorable response to the school environment that they are already experiencing in their laboratory setting, or whether it represents a rejection of their current association with this large state university can only be a matter for conjecture here.

Similar differences were not obtained on the senior high girls because the public school gifted girls showed an increase in their preference for a small college at this level. An interesting difference was found in the

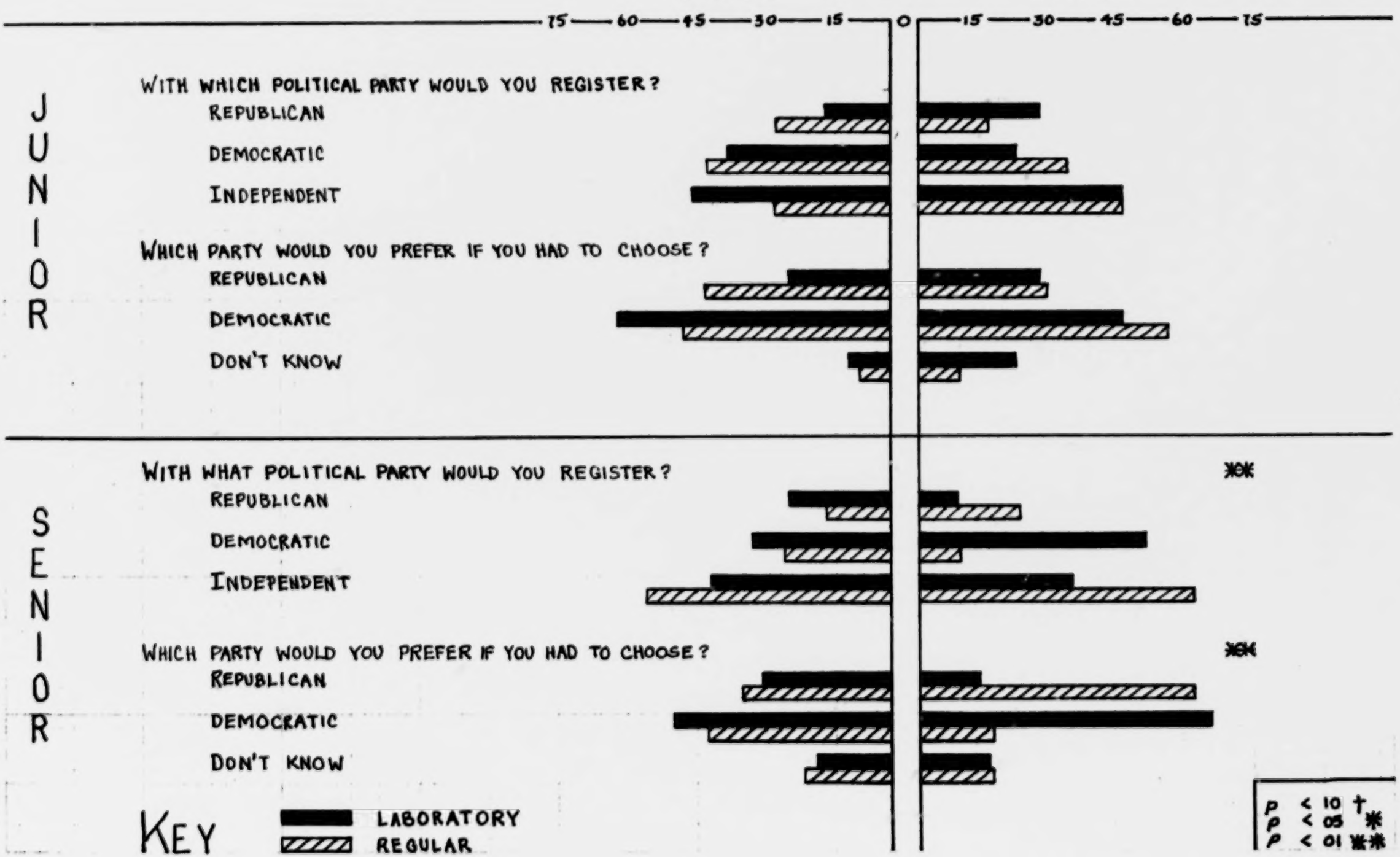
general factor of earning money by working outside the home. The significant difference in this case was made possible by the slight increase in the laboratory school girls earning money outside the home and a decrease in the regular school girls earning such money. One plausible explanation for this change would relate to the apparently more active social life of the public school girls which would tend to cut into the earning money through baby sitting since weekends provided conflict between social events and baby sitting opportunities. In the public school girls, the social interests appeared to take precedence.

Figure 7 reveals the stated political preferences for the groups in the present study. An extension of the liberal-conservative attitude presumably posed by the environment of the laboratory vs. the regular school program would result in the hypothesis that the laboratory school children would lean in preference to the Democratic party with the regular school youngsters showing a preference for the Republican party.

At the junior high school level, no obvious differences were noted in terms of statistical significance. A tendency may, however, be noted for the laboratory school boys to state an independent preference more frequently than the regular school students. When the junior high boys were forced to make a choice between the parties, there was a strong preference noted for the Democratic party with 62% of the boys favoring the Democratic party and only 25% the Republican. In the regular school boys, the choice of parties was much more evenly distributed. Few trends were noted with the junior high school girls in either setting. Both showed a definite preference for the label of independent, but when pressed for a definite decision, there was a definite lean towards the Democratic party on the part of both school groups.

FIGURE 7

POLITICAL PREFERENCES



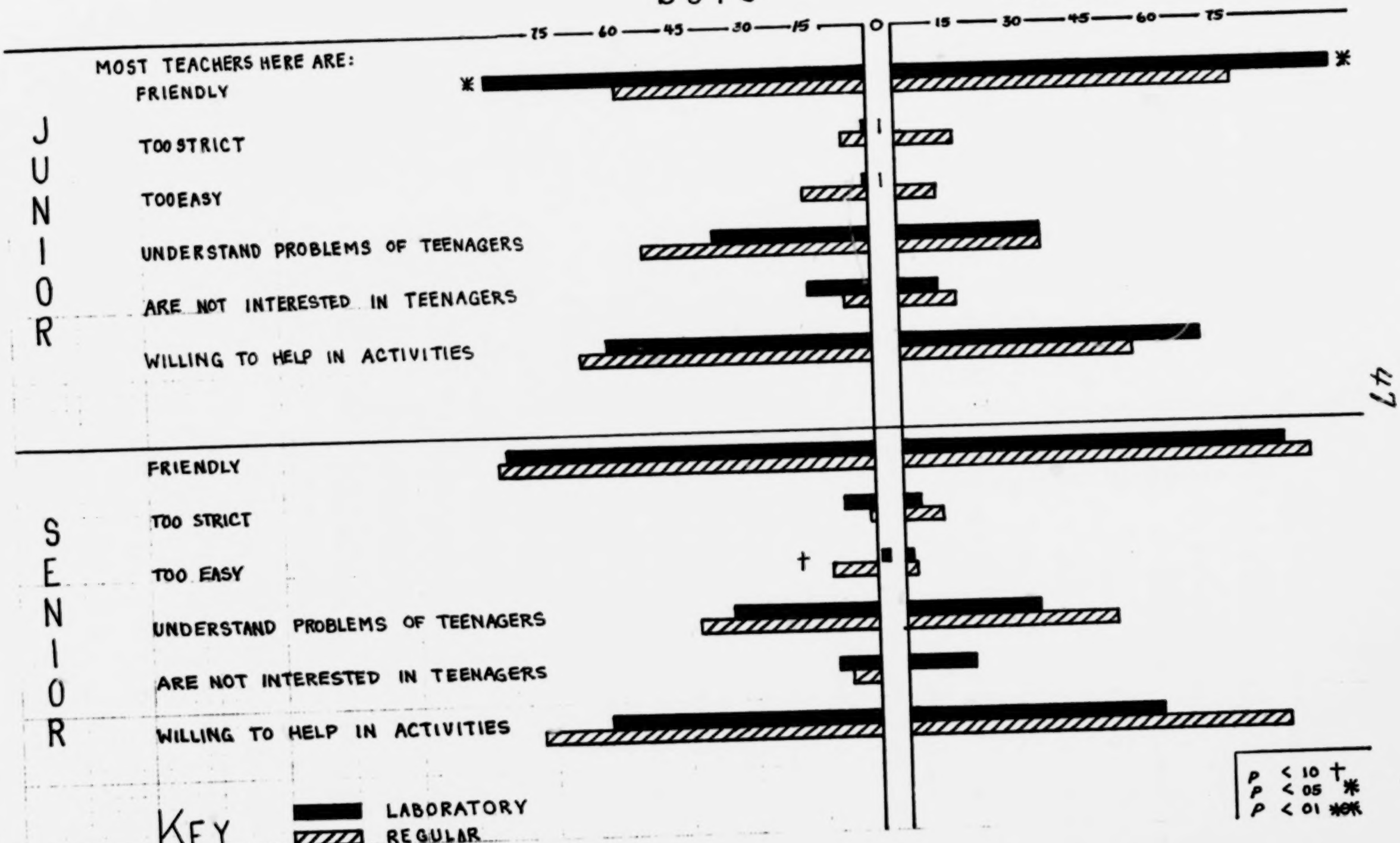
At the senior high school level, a slightly different portrait can be noted. Statistically significant results were obtained with the senior high school girls, with the laboratory school girls showing an overwhelming preference for the Democratic party, while the regular school girls showed a strong preference for the Republican party, when pressed for a decision. It is interesting to note that the senior high girls in the regular school showed a strong preference for the label of independent, but when pressed for a definite decision, practically all of this independent preference turned to a preference for the Republican party.

The senior high school boys did not show such dramatic differences between groups. The popularity of the independent label can be seen for both groups, exceeding the preference for each party. When these boys were forced to make a choice between parties, the results were slightly in favor of the Democratic party with the laboratory school boys leaning more in that particular direction than the regular school boys.

The general preference of the entire sample for the Democratic party usually identified on the liberal end of the political dimension deserves some comment. Terman and his associates (1947) found more preference for conservative political philosophies in his sample. Since the present data was collected at a time of national political interest, just preceeding a presidential election which produced a large Democratic majority, these present preferences may reflect the specific choice of the students for the particular candidates at this time, rather than long range commitment. Another possible explanation is that those persons who sought entrance to the laboratory school, whether their student was accepted or not, represent a slight bias in favor of more liberal orientation and that a further survey

FIGURE 8

ATTITUDES ABOUT TEACHERS



of the students who, although gifted, did not seek entrance to the laboratory school might present a rather different picture.

Figure 8 shows the attitudes of the present students toward their teachers. Substantial agreement can be noted in both sexes and at both levels. In the junior high school level, the laboratory school students, boys and girls, showed a consistent tendency to label their teachers as more friendly. Very few of either the boys or girls at the junior high level felt their teachers were either too strict or too easy that a substantial number were willing to say that the teachers understood teenagers. Very few were willing to say that the teachers appeared not to be interested in teenagers. A majority of the sample rated their teachers as willing to help in activities. Overall, this portrait at the junior high level seems to represent a ringing endorsement of the teachers.

At the senior high level, the reader can observe an almost identical pattern emerging. A substantial majority of the student viewed their teachers as being friendly and willing to help out in activities. Very few of the students were willing to say that their teachers were either too strict or too easy although a trend was noted in the public school senior high boys, who suggested that their teachers might be too easy. Roughly the same proportion of students still say that the teachers understand teenage problems and very few are willing to suggest that the teachers are not interested in them. Considering the fact that this period of development is supposed to be a phase of alienation between the adult and the teenager, the teachers come off amazingly well in these ratings. It should be remembered that this sample generally represented the top students, and if anyone should get along well with their teachers, this should be that group.

Further Attitudes and Values - Boys

Tables 9-18, present the findings of the questionnaire as reported by the boys in the present sample.

Table 9 shows the needed characteristics for popularity as given by the boys in the present study. The percentages reported represent the number of times that each of these items was ranked either first or second by one of the students. No significant differences between groups were noted at the junior high level. In both the laboratory and regular school programs, being an athletic star, having high grades, and being in the leading crowd all seemed to be important factors, whereas having a nice car or coming from the right family seemed to be relatively unimportant factors in both school settings.

At the senior high level, however, a number of differences were obtained between the laboratory and regualr school groups. Being an athletic star seemed an overriding factor for the boys in the public school setting, with 91% of the public school boys agreeing that this was an important characteristic for popularity. Only 54% of the laboratory school boys reported that being an athletic star was important. The laboratory school boys at the senior high level felt that being in the leading crowd and also being a leader in activities were as important as being identified as an athletic star. The public school group did not feel that being a leader in activities was important and this represented a statistically significant difference between the two school settings. None of the regular school students felt that coming from the right family was a factor, whereas, a small number of laboratory school students did agree with this particular proposition. In summary, the factors that make for difference in important characteristics for popularity seem to be much more evident at the senior high than at the junior high level.

Table 9

Needed Characteristics for Popularity (Boys)

Statement	Junior High		Senior High	
	Laboratory School (N=24) %	Regular School (N=22) %	Laboratory School (N=52) %	Regular School (N=23) %
Things needed to be important and looked up to by fellows here (Ranked 1st and 2nd)				
Coming from right family	21	4	9	0*
Leader in activities	42	32	46	23**
Having a nice car	0	4	2	5
High grades, honor role	54	41	31	19*
Athletic star	50	68	54	91**
Being in leading crowd	33	50	63	65

* $p < .05$

** $p < .01$

Table 10

Across Sex Popularity (Boys)

Question	Junior High		Senior High	
	Laboratory School (N=24) %	Regular School (N=22) %	Laboratory School (N=52) %	Regular School (N=23) %
What is important to be popular with the girls who really rate around here? (Ranked 1st or 2nd).				
Coming from right family	13	18	14	10
Leader in activities	50	32	42	10**
Having a nice car	9	23	8	19+
High grades, honor roll	39	27	24	10**
Being an athlete	48	59	43	86**
Being in the leading crowd	43	41	72	67

+ $p < .10$

* $p < .05$

** $p < .01$

Table 10 shows the across-sex popularity factors reported by boys in the present study. At the junior high school level, there were no significant differences between the two samples on their views of what was important to be popular with 'girls who rate.' Both groups agreed that being an athlete, a member of the leading crowd, and a leader in activities, were the three areas that possessed the most importance. Coming from the right family or having a nice car were not important. These results compare closely with what characteristics were necessary to be important with boys as seen in Table 9.

At the senior high school level, several of the differences between the two groups reached a level of statistical significance. The laboratory school boys reported that being a leader in activities and having high grades were important for popularity with girls. This result probably reflected the larger influence of intellectual environment of the laboratory school.

The public school population rated being an athlete as extremely important, and this overshadowed all the other factors. A slight advantage was also seen in the regular school for having a nice car. The emphasis on athletics and material factors in the regular school setting can be clearly noted. There was a marked increase in the importance of being an athlete at the senior high level for the regular school group and a corresponding decrease in the importance of being a leader in activities in the regular school program. The accident of coming from the right family does not seem to be a factor at any time. Being in the leading crowd assumes increasing importance at the senior high level in both school settings.

Table 11

Across Sex Socialization and Social Status (Boys)

Question	Junior High		Senior High	
	Laboratory School (N=24) %	Regular School (N=22) %	Laboratory School (N=52) %	Regular School (N=23) %
Do you date? (yes)	33	18	61	66
Whom would you rather go out with?				
Cheerleader	29	45	42	22
Best Student	25	18	20	26
Best Looking	46	36	38	52
Where are you in school activities? (center or near center)	29	45	33	22
Where would you like to be? (center or near center)	54	68	67	56
Are you a part of the leading crowd? (center or near center)	36	36	45	39
Would you like to be ? (yes)	36	20	23	20
(don't care)	50	27*	30	40

* $p < .05$

Table 11 shows the across-sex socialization factors and social status as reported by boys in the present sample. As we shall see later, these results are closely related to the findings obtained by girls in the present sample. The question as to whether or not you date is more related to age than to school environment. Roughly two-thirds of the boys in both groups were dating by the senior high level while one-third or less were dating by the junior high school level. The choice of desirable dating partner does not result in major differences between the groups. The laboratory school youngsters tend to choose the best looking girl, while the public school boy leans toward the cheerleader.

There were some changes in preference at the senior high level. The laboratory school students showed an increasing preference for dating a cheerleader while the regular school group showed less of an inclination to date cheerleaders and instead, appeared more interested in choosing the best looking girl. While the best student does not appear to have much popularity in terms of a dating partner, a comparison with the choices made in the Coleman study showed that the present sample indicates a larger tendency to choose the best student for a date and less emphasis on looks than in the general secondary school population reported by Coleman. This would be the type of difference one might expect in an intellectually superior sample such as used in the present study.

In response to the question 'Where are you in school activities?', there were no differences in the responses by group at either the junior or senior high school level. Less than one-half of any of the groups felt that they were at or near the center of school activities, but when asked whether they would like to be, more than half wished to be near the center of activities.

In response to the question 'Are you a part of the leading crowd?', no differences were found between the two groups. From 35 to 45% of the groups tended to agree that they were a part of the leading crowd, and this appeared believeable in terms of the expected status obtained through their intellectual superiority and associated factors. The only significant difference in this table can be found in the laboratory school boys saying that they did not care whether they were in the leading crowd or not. The lesser emphasis on socialization at the laboratory school level might be responsible for this greater degree of indifference at the junior high level. It is noted, however, that this indifference was not carried through to the senior high level.

Tables 12 and 13 show the attitudes of the boys in the present study to school and school associated activities. In Table 12 students were asked to report the school subjects that they liked. In this instance, the responses are independent of one another, and the students had the opportunity to check every one of the subject areas, if he so desired. In the major subjects such as science, mathematics, social studies and English, no significant differences were obtained between the groups at either the junior or senior high level. Furthermore, the degree of preference for each of these areas remains at about the same level of acceptance from the junior to senior high level with the exception of the subject area of English. It should be of considerable concern to school administrators and curriculum planners that English holds such a consistently low status in acceptance with boys of high ability. At the junior high level, it was reported liked by less than one-fourth of the students in either setting. Only 12% of the laboratory school students expressed a liking for the subjects and only 4% of the public school students at the senior high level expressed a preference for this subject area.

Table 12

School Subjects Liked (Boys)

Question	Junior High		Senior High	
	Laboratory School (N=24) %	Regular School (N=22) %	Laboratory School (N=52) %	Regular School (N=23) %
Subjects liked best in School				
Science	42	50	48	43
Math	62	68	63	52
Social Science	25	36	31	30
English	21	23	12	4
Shop or Vocational	17	27	17	0*
Physical Education	33	50	40	13*
Foreign Languages	38	23	13	22
Music	4	23+	13	22
Art	25	4+	13	4

+ $p < .10$

* $p < .05$

Science and mathematics seemed the most appealing of all the subject areas for the gifted boys in those settings, a not unusual, nor unsuspected finding. The social sciences appeared to have a level of acceptance somewhere between science and mathematics and English.

In the auxilliary or supplementary kinds of school subjects and activities, some significant differences were noted, at both the junior and senior high level. At the senior high level, shop, vocational work and physical education were given a distinct preference by the laboratory school students. Although this did not fit in with the predictions, which stressed the presumed intellectual interests of the laboratory school boys, it does fit into the general portrait of these students that suggests they may have more than enough challenge to their intellectual interests in their program and seek other avenues and dimensions of avocation or recreation. The regular school students at the senior high level appear interested in concentrating on the major subject areas and ignoring those not directly related to the academic work. No differences were noted in the area of a foreign language, except that there seemed to be a slight drop in acceptability in the laboratory school students from the junior to the senior high level, and this might be a matter of some concern to the staff.

The relatively low status of music and art in both groups can be noted at the junior high level. The regular school students appeared to accept music more, while art received greater acceptance as a subject area in the laboratory school. These preferences may represent more peculiarities related to specific instructors and opportunities in this area rather than basic interest differences between the two groups. The senior high level did not show similar differences, but did not receive a very high level of support for either of these subject areas.

Table 13

Attitudes to School (Boys)

Statements	Junior High		Senior High	
	Laboratory School (N=24) %	Regular School (N=22) %	Laboratory School (N=52) %	Regular School (N=23) %
Most of the boys here at school are studious. (yes)	17	18	46	13**
Most of the girls here at school are studious. (yes)	38	32	46	13**
Most of the boys here are disinterested in school. (yes)	8	32*	13	22
Time spent on homework outside school (2 hours or more).	29	17	60	22**
Are you going out for basketball this year?	39	43	36	9+
How would you use an extra hour at school? (study)	25	50+	31	52+
If you were going to college and had to choose between a small college and a large university, which would you choose. (small college)	62	36+	56	35+
If you were going to college and money were no problem, would you rather go away or stay at home? (go away)	67	62	76	78

+ $p<.10$

* $p<.05$

** $p<.01$

Table 13 indicates the attitudes toward school and school related activities in the present sample of boys. In this instance, a number of differences can be noted between the regular and laboratory school students. At the junior high level, the regular school gifted boys tend to agree more thoroughly with the statement, that, more of the boys are disinterested in school. These results naturally may represent perceptions of reality since these students are perceiving a different sample of boys in answering this question than would the laboratory school boys. No differences, however, were noted on the question as to whether boys or girls are studious in school.

While no differences were found at the junior high level on the amount of time spent on homework outside of school, a significant difference on this variable was noted at the senior high level. The greater pressure placed on the senior high laboratory school boys to perform academically can be noted by the fact that 60% of these students reported that they spent two or more hours on homework each evening, while only 22% of the regular school students reported the same.

At the junior high level, approximately the same proportion of students suggested that they might go out for the basketball team, however, there were differences on other items, such as 'how one would use an extra hour at school', or 'if they wanted to go to a small college or large university'. At both the junior and senior high school levels, the public school students reported that they would use an extra hour to study to a significantly higher degree than did the laboratory school students. This is in contradiction to the model of intellectual ability and interest expected of the laboratory school students, but it is in line with the alternative model that laboratory student have more than enough intellectual activities to keep them busy on

a regular basis and prefer to do other things with their free time. The choice of a small college in preference to a large university which differentiated the two groups at both the junior and senior high level has been mentioned previously. The laboratory school students prefer the small college.

At the senior high school level, the laboratory school boys reported more frequently that boys and girls in their school were not studious. About one-half of the laboratory school boys reported that both the boys and girls in their situation are studious, while only 13% of the public school boys reported the same. This suggests a rather substantial difference in atmosphere at the senior high level. Also, at the senior high level, more of the laboratory school students reported that they planned to go out for basketball than did the regular school students. The smallness of the laboratory school and the possible lack of more serious competition for the team may have had an influence on this result. The majority of the students in both settings and at both levels, reported that they would wish to go away to college if money were no problem, and the tendency appeared to be greater at the senior high than at the junior high level.

Table 14 shows the occupational directions and attitudes of the boys as reported in the questionnaire in the present study. In answer to the question, 'What kind of work do you plan to do when your schooling is finished?' no major differences between the two school settings were found at either the junior or senior high level. The major preferences of both groups and at both levels, was for the general areas of mathematics, engineering and science. No significant changes or modifications in these preferences were noted from the junior to senior high level. The laboratory school boys did show a slightly greater tendency to be interested in teaching

Table 14

Occupational Directions and Attitudes (Boys)

Question	Junior High		Senior High	
	Laboratory School (N=24) %	Regular School (N=22) %	Laboratory School (N=52) %	Regular School (N=23) %
What kind of work do you plan to do when your schooling is finished?				
Law, Medicine	18	24	19	17
Engineering, Math, Science	35	57	43	56
Teaching	18	4	27	11
Business, social science, fine arts, etc.	24	14	8	17
Rank in terms of importance on a job. (1st or 2nd rank)				
Security of steady work	33	36	25	30
Opportunity for rapid rise	12	9	21	9
Enjoyment of work itself	58	68	67	78
Friendly people to work with	67	36*	53	52
High Income	29	50	63	65

* $p < .05$

at both levels than the public school students. This would be in line with expectations, but represent only modest differences in preferences.

The students were asked to rank factors which they thought would be important on a job. At the junior high level, the significant factor noted was the tendency for the laboratory school students to report more frequently that they felt 'having friendly people to work with' would be important. This was not a reaction predicted on the basis of their supposed greater intellectual interests. Enjoyment of the work itself took predominance at both the junior and senior high levels through all groups. The opportunity for a rapid rise carried relatively little attraction for any of the group while the security of steady work appealed to them somewhat more. This is an interesting reflection on the attitudes of gifted youth, especially in view of the fact that this would be the group of students most likely to achieve rapid rise if they so desired. The emphasis on high income as an important factor, increased from the junior to the senior high level particularly in the laboratory school students. The emphasis of all of the groups on the intrinsic value of the work itself can possible be explained partially by the greater freedom of the intellectually superior student. From a realistic standpoint, he probably has a greater choice of occupations than does the less intellectually superior student. He, therefore, can better afford to choose his vocation on such matters as enjoyment, rather than income or security.

Table 15 gives more information on attitudes toward occupational attractiveness of possible adult activities. The comparison of the four occupations--jet pilot, famous athlete, missionary and atomic scientist--yielded no major differences between the laboratory and regular school boys' preferences. The occupational areas of athlete or scientist, were

Table 15

Occupational Attractiveness (Boys)

Question		Junior High		Senior High	
		Laboratory School (N=24) %	Regular School (N=22) %	Laboratory School (N=52) %	Regular School (N=23) %
What would you most like to be?					
	Jet Pilot	22	4	15	9
	Famous Athlete	39	45	27	26
	Missionary	9	0	13	4
	Atomic Scientist	30	50	44	61
Rank according to attractiveness if you could be any one of these (1st or 2nd rank)					
	Executive in large National Corporation	38	45	61	39
	Respected leader in civic and political affairs in community	62	50	43	70*
	Statesman in affairs of the nation	37	77**	63	43
	Successful businessman in the community	62	27*	33	48

* $p < .05$

predominant as choices while missionary and jet pilot showed relatively little attractiveness for either the junior or senior high school level. It is interesting to compare the choices of these intellectually superior students with the large high school sample obtained by Coleman. Coleman found that about 30% of his group showed a preference for the occupation of jet pilot which was more frequent than the present sample. Coleman's sample also found the atomic scientist being chosen about 25% of the time which would indicate that the present sample indicated a greater preference for the scientific occupation as might be expected on the basis of their intellectually superior status. The occupational area of missionary had relatively little attractiveness for the general secondary school sample reported by Coleman and this low preference is reflected in the present sample as well. Perhaps a different choice of occupational areas would yield different results. It would have been interesting if the choice of Peace Corps was substituted for missionary in this regard.

The choices in the bottom of Table 15 show significant differences at the junior and senior high levels in the attractiveness of other possible occupational areas. At the junior high level, the regular school students showed a significant preference for being a statesman in the affairs of the nation, while surprisingly enough, the laboratory school boys preferred the successful business man in the community and respected leader in civic and political affairs of the community. As these preferences reflect neither the background of these boys nor agreement with other statements as to what their actual occupational plans would be, they may again be a reflection of their desire to turn their backs on the pressures of the intellectual environment.

A different pattern of results can be noted at the senior high level in which the regular school boys prefer significantly to be respected leaders in their community while the laboratory school students at the senior high level show a preference for national eminence over local power and influence. In general, the regular school students seem to prefer local community positions while the laboratory school students prefer those that include national prominence. In interpreting the results of these occupations, the reader must remember that the students were limited in their choices to these particular areas. A different set of occupations might reveal dramatically different results.

Table 16 shows the parental background and family attitudes of the boys in this study. Unexpected differences were noted in the parental backgrounds of these boys in the junior high school level with the parents of the laboratory school boys showing a significantly higher level of father education and occupational level and mother educational level. Since random sampling determined the placement of the student, these results were somewhat surprising and were not duplicated at the senior high level.

In evaluating the possible influence of these differences on other results, it may be noted that the senior high level shows, by far, the higher number of differences between the two groups.

In terms of students choosing between a vacation trip with the family and attending a high school basketball tournament that their school is participating in, no differences were obtained between schools. One can note a sharp drop in the laboratory school boys' tendency to choose the family from junior to senior high level. In terms of choosing between the camping trip with friends and a family vacation, there were no significant

Table 16

Parental Background and Family Attitudes (Boys)

Question	Junior High		Senior High	
	Laboratory School (N=24) %	Regular School (N=22) %	Laboratory School (N=52) %	Regular School (N=23) %
Father's Education (Graduate School)	78	41*	67	43
Father's Occupation (Teaching, Professional)	74	45*	60	56
Mother's Education (College)	78	50+	77	70
Choose between vacation trip with family and high school basketball tournament. (Family)	58	41	31	48
Choose between camping trip with friends and family vacation. (Family)	88	82	60	52
Which would be harder to take, parents' disapproval or breaking with friends? (Parents)	56	71	54	64

+ $p < .10$

* $p < .05$

differences between groups, although the family gets chosen less often at the senior high level as might be expected. The tendency of the students to choose the family less frequently, does not mean that the family has no influence at all. The majority of the students are still choosing the family in preference to their friends on this item at the senior high level. No significant differences were obtained either to the question as to whether it would be harder to take parents' or friends' disapproval. The majority of these students still feel that parents' disapproval would be more difficult to take at both the junior and senior high levels.

Table 17 shows the results of the questions the boys responded to in terms of things judged important. In answer to the question, 'what are some things to strive for', no differences were obtained between groups. The percentage figures represent the number of times a particular item was chosen either first or second of these four possibilities. The choices made at the junior high level, remain fairly consistent with the senior high preferences. Both levels of students in both educational settings place a heavy emphasis on "learning as much as possible." At the junior high level, both groups appeared to place a greater value on being liked and accepted by peers than by pleasing parents, although at the senior high level, both seemed equally important.

The item of "living up to religious ideals" shows very little variation from one level to the next and seems to remain the last item of importance as far as these students are concerned. As in the relatively limited choice of the occupation area of missionary, religious interests do not appear to play an important role in the lives of these students when compared with other factors in their environment.

Table 17

Things Judged Important (Boys)

Statement	Junior High		Senior High	
	Laboratory School (N=24) %	Regular School (N=22) %	Laboratory School (N=52) %	Regular School (N=23) %
Rank in importance: Something to strive for: (1st or 2nd rank)				
Pleasing Parents	43	27	47	45
Learning as much as possible	71	72	82	73
Living up to religious ideals	35	27	29	41
Liked and accepted by peers	52	63	45	41
Rank Importance to you in college years. (1st or 2nd rank)				
Stimulation of new ideas	49	73+	72	70
Preparation for making a living	74	68	82	83
Campus activities and social life	13	32	14	17
New friends who share my interests	65	27*	32	30

+ $p < .10$

* $p < .05$

In terms of what would be important in college the ratings of the students are different at the junior high level. The regular school gifted students placed greater importance on the stimulation of new ideas while the laboratory school students showed a greater interest in "new friends who would share their interests." This is again opposed to what might be expected on the basis of the greater intellectual environment of the laboratory high school student, but consistent with the possible rejection of the intellectual environment and willingness to seek new dimensions and experiences. These differences were not apparent at the senior high level, the most important factors in college were generally agreed to be a stimulation of new ideas and preparation for making a living. The social life and campus activities factor which one might have expected the regular school students to be more interested in did not show much popularity at either level or either group.

Table 18 shows the self-attitudes and opinions of the boys in the present study. At the junior high level, the laboratory school students reported trouble in their school performance much more frequently than do the regular school students. Forty-two per cent of the laboratory school students reported they are not able to keep up with the rest and 30% reported they are not doing well in school. This may be compared to the 18% and 9%, respectively, for the public school students. These results again, probably reflect the more competative and higher standards of the laboratory school in terms of intellectual performance.

At the senior high school level, there still was a slight trend for the laboratory school students to agree with these questions, but it no longer appeared statistically significant, mainly because the public school boys now

Table 18

Self Attitudes and Opinions for the Boys

Statements	Junior High		Senior High	
	Laboratory School (N=24)	Regular School (N=22)	Laboratory School (N=52)	Regular School (N=23)
I am often not able to keep up with the rest.	42	18†	36	30
I am not doing so well in school.	38	9*	33	17
When you have to decide between yourself and the group (myself)	78	64	73	74
If you could be remembered for one of three things which one would you want it to be?				
Brilliant student	48	64	58	77
Athletic star	26	27	23	14
Most popular	26	9	19	9
The years in high school have been:				
Fun, exciting, interesting	61	53	60	70
Fairly pleasant	39	41	19	30
Fairly dull, unhappy	0	6	21	0*

† $p < .10$
* $p < .05$

agree, in greater numbers, with the statement. Other indications have supported the notion that the intellectual climate gets more difficult for the gifted students at the senior high level and these statements reflect this particular trend.

About three out of every four of the students in each of the groups reported that they decide in favor of their own ideas when there is a conflict between themselves and the group.

When asked what they would like to be remembered for, all of the groups showed a preference to be remembered as a brilliant student and this was proportionately much greater indication than was obtained on the general population by Coleman. The public school gifted boys did not wish to be remembered for being popular any more than the laboratory school boys. While the regular school students clearly see their school as being highly influenced by social and athletic goals, as supported in previous tables and figures, it does not necessarily follow that they personally go along with these values. In this connection, one can refer back to the question as to what they would do when forced to decide between themselves and the group--a large majority of them say they will decide for themselves. This is apparently what they have done in this instance.

In response to the statement, 'The years in high school have been exciting, merely fairly pleasant or dull and unhappy,' the large majority of these talented students report highly positive reactions. Only at the senior high school level does there appear a significant difference between the two groups. Twenty-one per cent of the laboratory school boys reported that the school had been either fairly dull or unhappy as against 0% of the public school boys reporting in this direction. These results tend to reflect the pressure these students seem to feel for intellectual excellence.

As to which of these sets of results one perceives as more favorable to the development of a talented student, one must rely on the value orientation of the person doing the judging. Perhaps a school placing emphasis on intellectual excellence and performance must have a small proportion of students unhappy. Whether this reflects more on the school or on the particular student, is hard to judge from present data. To put this concept another way, perhaps the fact that 0% of the regular school students report that high school has been fairly dull or unhappy does not necessarily represent a good trend but may reflect a difference in standards. Other data would have to be brought forth to support either of these particular positions before a conclusion could be drawn.

Further Attitudes and Values - Girls

Table 19 shows the factors related to popularity of Girls in the present sample as reported by junior and senior high girls in the two school settings. Of the six items checked as important for popularity, a 'good reputation' is by far the most important factor throughout all samples. The fact that 70 to 90% of the girls rate this factor as important agrees closely with Coleman's conclusion that a girl's reputation is a crucial and invariant element in popularity for the high school culture.

Two significant differences at the .10 level of probability appeared at the junior high school level. The public school girls placed more emphasis on proper dress and knowing about movie stars than did the laboratory school girls. These results would be in line with the presumed greater emphasis on social customs and material values in the comprehensive high school.

The differences between the public and laboratory school girls became more striking at the senior high school level. At this point, there was even a difference in favor of the public school girls on the item of good reputation,

Table 19

Factors Related to Popularity (Girls)

Statement	Junior High		Senior High	
	Laboratory School N=17 %	Regular School N=50 %	Laboratory School N=44 %	Regular School N=16 %
Which of these is important to be popular in your group?				
1. Be a good dancer	6	24	7	19
2. Sharp clothes	18	22	4	50**
3. Good reputation	88	86	70	94†
4. Stirring up excitement	35	24	34	31
5. Proper dress	53	76†	50	88**
6. Knowing about movie stars	0	18†	4	31†

† $p < .10$
** $p < .01$

although 70% of the laboratory school girls deemed it important, 94% of the public school girls labelled it important. Other differences were in the direction of the regular schools checking as important; sharp clothes, proper dress, and knowing more about movie stars. These results fit well with the projected image of the two environments. Even items that did not show significant differences such as being 'a good dancer' while not significant, did show differences in the expected direction. Only the items 'stirring up excitement' failed to show any trend in favor or against either of the groups.

Table 20 shows the across sex socialization as reported by the girls in the present study. On questions relating to dating practices or preferences there was little to choose between the laboratory or public school girls at either the junior or senior high school level. Whether the girl was dating or not obviously had less to do with the school setting than with their age. At the junior high level, less than 20% of the girls were dating, but at the senior high level, about two-thirds of the students were dating. These percentage figures agree closely with the already obtained proportion of boys dating in the same setting.

Social skills that are related to dating, such as the ability to dance well, seemed to be well established at the junior high school level, although slightly improving at the senior high. Again, there was little to choose between the two groups on this characteristic.

In terms of dating preference, both groups showed a greater affinity for dating the best students than was found in the Coleman study, in which the girls generally did not prefer to date the brilliant students. Despite the high rating obtained by the star athlete in terms of general social prestige,

Table 20

Across Sex Socialization (Girls)

Question	Junior High		Senior High	
	Laboratory School N=17 %	Regular School N=50 %	Laboratory School N=44 %	Regular School N=16 %
Do you date? (yes)	18	16	64	69
Whom would you rather date?				
Star athlete	23	18	15	21
Best student	41	44	49	64
Best looking	35	38	36	14
How well do you dance? (fairly well or better)	53	70	82	75
Is it easier for a girl to get to be popular and well known in this school by making friends with a popular girl or dating a popular boy? (dating a popular boy)	33	64*	39	60

* $p < .05$

he was not rated high as a dating prospect by this group. This underlines the point that understanding the social norm and accepting it may be two very different things for this sample.

The higher intellectual status of the girls in the present sample may well have influenced their desire or interest to date the best student. In terms of changes from junior to senior high level, the laboratory school girls remained quite consistent in their patterns of choice. The senior high girls in the public school showed an increase in preference for dating the best student and a decrease in choosing the best looking student.

The one statistically significant difference found in this table was on the question as to whether it was easier for a girl to be popular and well known by making friends with a popular girl or by dating a popular boy. The greater heterosexual nature of the social structure of the regular school was clearly evident. In the junior high school level, 64% of the regular school girls reported that dating a popular boy would be the way to become popular and well known, whereas, only 33% of the junior high girls at the laboratory school felt this way. The same trend was noticeable at the senior high level although it did not reach a level of statistical significance.

Table 21 shows the degree of social involvement and interests reported by the girls in the present sample. The first two questions refer to the influence on their friends of their receiving an honor such as being named as class assistant. No difference between the two groups was found at the junior high level but a significant difference was found at the senior, with the regular school girls reporting a greater degree of envy and respect on the part of their friends as a result of such an assignment. The difference at the senior high level was occasioned by a sharp drop in the proportion of laboratory school

Table 21

Social Involvement and Interest (Girls)

Question	Junior High		Senior High	
	Laboratory School N=17 %	Regular School N=50 %	Laboratory School N=44 %	Regular School N=16 %
1. If you agreed to be class assistant, how would your friends feel? (Envy and look up to me)	47	59	27	62*
2. If you did become assistant, how would your friends feel? (Envy and look up to me)	35	55	27	56*
3. What if parents approved of your joining a club but you would break with best friend? (Would join anyway)	41	39	30	31
4. How far from the center of school activities are you? (In inner circle)	35	41	41	38
5. Where would like you like to be? (In inner circle)	70	78	60	87
6. Would you say you are part of the leading crowd? (yes)	47	43	58	50
7. If no, would you like to be part of the leading crowd? (yes)	22	22	10	44*

* $p < .05$

girls who felt that their friends would envy or look up to them as a result of their being named class assistant. Whether these results represent a certain blasé attitude to such an appointment in a school where many students could attain this honor, or whether it marks a reduction in the influence of the adult society of teachers, is hard to determine from present data. There was remarkably little difference between the groups on the question of whether they would join a club if it meant breaking with their best friend. There was a slightly greater tendency at the senior high level to keep the friend in preference to the club, as might be expected.

In regard to whether the girls felt in or near the center of school activities, or whether they would like to be the center, there were no significant group differences. About two out of every five of the girls felt they were in or near the center of school activities and from 60 to 90% of the girls would like to be in the center of school activities.

About one-half of the girls in all groups reported that they were part of the leading crowd but a significant difference was found on reaction to the statement that they would want to be in the leading crowd. A significantly smaller proportion in the laboratory school answered 'yes' to this question. This answer suggested an attitude of lesser importance being placed on being socially acceptable or 'in' which was prevelant at the laboratory school. The larger emphasis on the importance of other values may have played a role in this difference. The reader will recall that a similar finding was reported by the laboratory school boys in the present study.

Table 22 shows the subjects liked best in school by the girls in the present sample. In each of these items, the girls were given the opportunity to circle the subjects they liked best so that the items were independent of

Table 22

Subjects Liked Best in School (Girls)

Question	Junior High		Senior High	
	Laboratory School N=17 %	Regular School N=50 %	Laboratory School N=44 %	Regular School N=16 %
Subjects Liked Best in School				
Science	12	29	20	56**
Math	65	45	36	31
Social Science	41	35	61	50
English	35	45	39	50
Home Economics	24	25	7	12
Physical Education	53	49	18	31
Foreign Languages	65	37*	57	37
Music	35	57	48	56
Art	53	41	39	19

* $p < .05$
** $p < .01$

one another. There were a few differences between laboratory and regular school girls at the junior and senior high level but generally there was a consensus on those subjects approved and those that were not.

At the junior high level, there was a significant preference for the study of foreign languages in the laboratory school and some tendency for mathematics to be enjoying greater popularity in this sample of girls. This unusual preference for mathematics for girls, may reflect the special curriculum at the junior high level in the new mathematics under the guidance of a nationally known and highly dynamic professor. None of the girls' preferences for the subject areas in the regular school group were significantly higher than the laboratory school, although the largest difference was suggested in their preference for music. Both groups showed a surprising preference for physical education at the junior high school level, but the laboratory school girls dropped dramatically in this area at the senior high level. The areas of social science and English appear to be moderately popular with all groups with the area of science receiving the least enthusiastic choices of the girls at the junior high level. The low status placed on the occupation of scientists in previous responses to this questionnaire, suggest that a very negative image is held by science and scientists in the present group.

At the senior high level, a dramatic increase was noted in the popularity of science in the girls in the regular high school, while the laboratory high school girls continued to rate the subject lower than most of the other areas. The social sciences, English and foreign languages, maintained their reasonably high status but mathematics showed a drop in popularity from the junior to the senior high level in both groups. When these findings are compared to the boy's responses, it is clear that English represents a subject that is popular with girls, but not with boys, whereas, the opposite is true of science.

There were few differences in the general pattern of subjects liked in either of these two groups, and there is the suspicion that when differences exist they may represent the accident of the particular instructor, rather than to the atmosphere of the general educational environment.

Table 23 shows the honors won and the attitudes toward school by the girls in the present study. Some interesting results were found in terms of the honors won. A much larger proportion of gifted girls in the regular school program reported that they have won honors in school that had to do with academic performance. It would seem off hand, that the lesser competition faced by the regular school girls enabled the intellectually superior girls in that setting to obtain more recognition for their school performance. The laboratory school, with its greater competition and relatively lesser status afforded the intellectually superior junior high girl did not produce as many honors. While these differences remained in the same direction at the senior high level, they were not as striking. By this time, it appeared that the laboratory school girls were receiving more honors and recognitions for their academic work.

In terms of the preference that the girls had in the kind of honors they would most like to win, significant differences were found at both levels in favor of the laboratory school girls seeking academic recognition. About twice the number of laboratory school girls wished to earn academic honors, while about one-half of the public school girls were seeking honors outside the academic dimension. There were no group differences as to whether boys or girls were more studious in their school, but one rather surprising result is that from one-fourth to one-third of the senior high girls had cut school at one time or another. Since the question did not ask for the number of times they had cut school, the full implications of this item cannot be evaluated.

Table 23

Honors and Attitudes to School (Girls)

Question	Junior High		Senior High	
	Laboratory School N=17 %	Regular School N=50 %	Laboratory School N=44 %	Regular School N=16 %
1. Have you won honors in school? (yes)	24	70**	43	62
2. What honors have you won, school or other? (school)	25	84**	61	80
3. What one honor would you most like to win? (school)	88	45**	90	54**
4. Most girls here are studious.	35	41	52	50
5. Most boys here are studious.	24	25	32	37
6. In the last year, have you cut school?	18	10	37	25
7. I am often not able to keep up with the rest?	18	25	28	19
8. I am not doing so well at school.	24	4*	32	12

** $p < .01$

The greater competative situation in the laboratory school was revealed by the girls responses to the statement 'I am not doing so well in school.' One out of every four of the laboratory school girls at the junior high level agreed with that statement, and one out of every three at the senior high level agreed with it. This greater competative situation apparently causes the students to readjust their self-concepts downward, in contrast to the expectations of some observers, that enrollment in such a school would make them feel superior and cocky.

Table 24 shows the occupations and recreations found most desirable in the junior and senior high girls in the present investigation. In the first set of responses, the students were asked to rank, from one to four, the occupations noted in the Table. The percentage reported here represents the number of times a particular item was ranked either first or second in desirability. There was little to choose between the two groups in terms of the various occupational desirability rated here. No statistically significant differences between the laboratory and regular school groups were found at either the junior or senior high level. What the situation might have been had a different set of occupations been presented is, of course, impossible to judge.

Those differences that were noted seemed to be more a function of age rather than school environment. The popularity of 'woman journalist' for example, increased substantially from the junior to the senior high level while the popularity of being an 'airline hostess' dropped by almost one half. The occupation of 'interior decorator' maintained a relatively high status throughout the groups and at both levels.

Table 24

Occupations and Recreation Found Desirable (Girls)

Question	Junior High		Senior High	
	Laboratory School N=17 %	Regular School N=50 %	Laboratory School N=44 %	Regular School N=16 %
Occupations ranked in terms of desirability (Ranked 1st or 2nd)				
Secretary to business executive	47	43	32	44
Woman Journalist	41	54	77	75
Interior Decorator	65	51	63	62
Airline Hostess	47	51	27	19
Recreation ranked by desirability (Ranked 1st or 2nd)				
Watching TV	41	43	34	12
Going to Movies	82	65	57	69
Listening to Radio or Records with friends	41	53	52	75
Listening to Radio or Records alone	35	39	54	44

In terms of recreational desirability, the same method of recording choices was followed. The percentages reported represent the number of times each of the items was ranked either first or second of the four possibilities. No significant differences were found between the groups at either the junior or senior high school level. Some differences can be noted in changes by age level rather than by school environment. Going to movies seemed to be the most popular activity for both laboratory and public school girls at the junior high level. While it remained a popular activity at the senior high level, listening to the radio or listening to records with friends challanged it for popularity. One can note a significant drop in the proportion of regular school girls watching television from the junior high to the senior high level. This was not in line with what might be predicted. TV carries the implication of being essentially, a non-intellectual type of activity. Such activity seemed more acceptable by the laboratory school senior high girls than originally expected. Such a trend does fit into the fabric of the laboratory school girls and boys seeking interests other than intellectual for their recreation. It must be noticed in the present table, though, that hardly any of the recreational choices, could be labeled as intellectual in nature.

Table 25 shows the responses of junior and senior high girls to things they felt they should strive for in school and activities which were rated as important to them in school. The comparison between the laboratory and public school students at both levels yielded no statistically significant differences in the ranking of these items. 'Learning as much as possible' was one of the characteristics chosen to strive for in school and was rated most high by three out of four of the girls at all level, and was as important

Table 25

Things Judged Important (Girls)

Question	Junior High		Senior High	
	Laboratory School N=17 %	Regular School N=50 %	Laboratory School N=44 %	Regular School N=16 %
Things to strive for in school (Ranked 1st or 2nd)				
Pleasing my parents	76	51	37	56
Learning as much as possible	76	72	74	74
Living up to religious ideals	23	38	32	37
Being accepted and liked by other students	35	40	55	31
Rank in terms of importance to you (Ranked 1st or 2nd)				
Groups and activities outside school	18	24	23	31
Activities associated with school	29	41	54	50
Having a good time	65	56	48	38
A good reputation	94	84	80	81

at the senior as well as junior high level. One of the few differences in this Table can be noted in the surprising drop in the desire to please one's parents in the laboratory school girls at the senior high level, compared with junior high level. This general pattern of increasing distance between parents and student in the laboratory school group at the senior high level has been remarked on before. This result appeared as one more aspect of that total situation. This drop is counterbalanced by an increased desire to seek the acceptance of the peer group. The regular school students, however, maintained a fairly constant level of response to these items at the two different levels. Contrary to general expectations, the regular school girls did not rate being accepted and liked by their peers as of greater importance than the laboratory school girls.

In terms of ranking those things which are important to them, one can note the overwhelming importance placed on a good reputation, a finding which has been previously reported in other tables. There is a decrease in the choice for 'having a good time' which is something that would be expected on the basis of growing maturity of the students. As far as these factors are concerned, age appears to be more important than school environment. Groups and activities outside school appear to hold the least importance to the girls in the present study at both levels.

Table 26 shows the recreational preferences of the present sample girls in terms of TV program preference. In response to questions as to whether TV is fun or boring, it may be of some comfort to the Television industry that even these intellectually superior girls, who might be expected to be more critical about the content of television programs, reported that TV was fun. There was a slight dip in that response in the senior high laboratory girls, but it did not reach a level of statistical significance.

Table 26

Television Preferences (Girls)

Question	Junior High		Senior High	
	Laboratory School N=17 %	Regular School N=50 %	Laboratory School N=44 %	Regular School N=16 %
I think TV is fun - boring. (fun)	76	78	59	75
TV shows I enjoy:				
Variety	18	29	16	44*
Popular Singers	71	84	59	81
Comedy Shows	41	25	50	50
Plays or Drama	59	53	45	62
Westerns	53	29+	27	31
Quiz Shows	18	24	16	25
Sports	18	24	20	44
Movies	71	80	68	69

+ $p < .10$
* $p < .05$

Under TV shows enjoyed, there was a general similarity of patterns extending to both the laboratory and public school girls. Those items that could be identified as intellectual, such as plays or drams, did not show differences in favor of the laboratory school girls, as might have been expected.

While one might have expected a greater interest shown by the regular school girls in popular singers and variety shows, only one significant difference was obtained at the senior high level. The regular school girls showed a greater proportion of interest in variety shows, whereas, the senior high laboratory school girls rated this as very low in preference. A trend was noted in the laboratory school girls at the junior high level, preferring western shows more than the regular school girls. This preference, however, disappeared at the senior high level.

In general, both groups of girls liked to watch movies on television, popular singers, and plays and drama. They were less interested in quiz shows, sports and variety shows. Such results may very well be reflected in the current programming one finds on television. On the basis of these responses, it may be speculated that the television polls may be more correct than the hopeful wishes of those who would see a revolt against television programming on the part of the intellectual community.

Table 27 shows the reported relationships with the families as given by the girls in the present study. No statistically significant differences were found between groups at the junior high level. Both groups were almost unanimous in reporting that their parents would feel proud if they were chosen cheerleader and a relatively smaller proportion of both groups said they would go against their parents wishes in joing a club that the parents did not approve of. Less than half of the students at both the laboratory and

Table 27

Relationships with Family (Girls)

Question	Junior High		Senior High	
	Laboratory School N=17 %	Regular School N=50 %	Laboratory School N=44 %	Regular School N=16 %
1. If you were chosen cheerleader, how would your parents feel? (both proud)	100	92	65	94**
2. If you had a chance to join a club but your parents disapproved, what would you do? (join anyway)	18	31	51	31
3. Do you have an agreement with your parents on:				
Course of study to take?	29	53	70	100†
Which college to go to?	24	28	61	80
Living away from home?	41	42	77	80
How college education would be paid for?	47	36	61	73

† $p < .10$
* $p < .05$
** $p < .01$

public school reported that they had reached a general agreement with their parents on the course of study they were to take in college, or whether or not they should live away from home. Apparently the parents feel there still is time to discuss such matters. It is interesting to note that the public school girls reported, at a higher level, that they had discussed the course of study they were going to take in college at the junior high level. In the senior high groups, a different pattern emerged. A much smaller proportion of the laboratory school girls, although still 65%, reported that their parents would feel proud about their being named cheerleader. The regular school girls still report expected parental approval at a high level on this characteristic. There was a marked increase in the proportion of laboratory school girls who would go against their parents wishes in joining clubs they disapproved of. While a proportion of the responses of the regular school girls remained the same at the senior as at the junior high.

Two differences were noted at a probability level of .10 or less at the senior high level. The girls in the regular school program reported that they had discussed with their parents the course of study they were to take in college more often than in the laboratory school girls. There was a tendency for them to have settled which college they were to go to and how the education would be paid for. When these results are put together with some other findings, they represent an unusual trend for the senior high girls of the laboratory school to become distant from their parents and less influenced by them. Whether this can be determined as early signs of independence from the family or represent a substantial difference in basic loyalties and identification, is difficult to interpret in the framework of the present results. Such differences need more specific investigation however.

Table 28

Aspirations and Self Image (Girls)

Question		Junior High		Senior High	
		Laboratory School N=17 %	Regular School N=50 %	Laboratory School N=44 %	Regular School N=16 %
Which of these would you rather be?					
	Actress or Artist	24	37	42	25
	Nurse	18	22	19	19
	Model	6	16	12	6
	Teacher	53	25	28	50
If you could be remembered here at school for one of the three things below, which would you want it to be?					
	Brilliant Student	56	53	53	44
	Leader in Activities	31	33	40	38
	Most Popular	13	14	7	19

Table 28 shows the general aspirations and self image as reported by the girls in the present study. No significant differences were obtained between laboratory or regular school girls at either levels, in terms of their preferences for various occupations or for what they would like to be remembered for at school. Nevertheless, the results of both of these samples deviate in an interesting fashion from the overall findings obtained in the larger study by Coleman. For example, Coleman found that roughly one-third of the girls responded with the desire to be a model as opposed to the small percentages given by this occupation by both laboratory and public school girls at both levels. A greater preference is shown by the intellectually superior girls in the present study for being an actress or artist. In the Coleman study about 20% of the girls expressed their interest in this direction. This was much lower than the percentage found with the present group.

Although accepted levels of statistical significance were not reached in the desire to be a teacher, the trends were most interesting. Roughly twice the proportion of laboratory students wished to be a teacher than the regular school girls at the junior high level, but the percentages being almost exactly the reverse at the senior high level. The desire to be a teacher in the laboratory school girls is much less at the senior high group than at the junior high level and it seems to increase in the senior high group at the regular school program. The area that seems to profit most from the change in the laboratory school group is the 'actress or artist'. The regular school girls increase in desire to be a teacher at the senior high level, was taken at the expense of all three of the other occupations. These results can be understood in the general framework of lessening intellectual activities and interests of the laboratory school girls as opposed to greater stimulation and interest in these areas in the regular school program at the senior high level.

In response to the question as to what they would like to be remembered for in school, the percentages were quite consistent from laboratory to public schools and do not change from one level to another. At both levels, they reported they would like to be remembered as a brilliant student with lesser emphasis being on leader in activities and a very low percentage reported they would like to be remembered as popular. Comparing these results to the Coleman sample with a norm group of almost 4,000 students, one finds sharp differences. In the Coleman study, 28% of the girls wanted to be remembered as brilliant students. The present sample almost doubles that proportion and reflects the greater intellectual aspirations of the present sample. The greatest difference lies in the girls of the Coleman sample, in that 34 to 35% of the girls wished to be remembered as the most popular. Thus, both groups of talented girls in the present sample seem to accept their own intellectual status and prefer it to the more social dimension.

Discussion

The results of the study have indicated that there were meaningful differences between gifted students randomly selected to attend laboratory and regular secondary schools. These differences were rather selective, however, and did not appear across all of the dimensions that were measured in the present study, nor did they appear equally for both sexes. The major differences appeared in the domain of attitudes and values, with the aspects of cognition and self-image much less affected.

Cognition

Few differences were obtained between laboratory and regular school gifted students along the cognitive dimensions as measured from the Guilford model of convergent and divergent thinking. It had been hypothesized that the gifted laboratory students, placed in an atmosphere which presumably valued intellectual adventure, and given more freedom for such an adventure, would appear superior in divergent thinking, a characteristic that seems dependent on an attitude of intellectual risk taking. Only with the senior high boys, and only on one measure, was such a finding obtained. On the other hand, one test of convergent thinking showed the regular school students to be superior in the comparisons of senior high boys and junior high girls.

The intercorrelation matrix of the cognitive measures showed some interesting sex differences which cut across the two school environments. The boys showed a tendency to obtain higher intercorrelations, both within the convergent thinking dimension, and between measures of convergent and divergent thinking than was true of the girls. The girls were more test specific in their performance and only on the divergent thinking test were significant interrelationships found in their performance. The boys were apparently responding to the overall test situation as opposed to a greater trend for the girls to respond differentially to the individual measures.

The conclusion drawn from this set of predominantly neutral findings was that, whatever else the differential atmospheres of the schools might influence, its impact on these cognitive abilities measured in this study was slight.

No attempt was made to evaluate or compare the achievement scores of the two groups because of the different curriculum approaches found in the two academic settings. The laboratory school has become noted for its curriculum innovations and perceives its role as one of developing new curriculum ideas and methods in virtually every subject matter. While similar trends could be noted in the regular secondary school programs, much of their curriculum effort remains in the traditional vein. The difficulties of making comparisons of student performance under these different conditions has been well recognized by those facing the dilemma of evaluating the new curriculum projects. While achievement tests can measure the degree of student attainment to the goals of a particular curriculum, it cannot be used as a comparative indicator for curricula that have different stated goals. Future performance over the next few decades would be the true measure of differential achievement stemming from the two environments.

Self Concept

On the measure of self concept used in the present study, the Sentence Completion Scale, no major differences were obtained between laboratory and regular school groups when the comparisons were made between laboratory and regular school populations. Some interesting differences were noted, however, in comparing the self image of students at different levels within the same school environment. The intellectual-self concept of the gifted laboratory school boys at the junior high level was significantly lower than that of the laboratory boys at the senior high level.

In contrast, the intellectual-self concept of gifted boys in the regular junior high school was higher than that of the gifted boys in the regular senior high program. Since the expectations of others is known to play an important part in the development and expression of the self concept, these contrary results could be explained by a greater level of expectation being applied to the gifted boys at an earlier stage in their academic career in the laboratory school. In the public school group such expectations which result in the lowering of the self concept might not become evident until the senior high school level. Thus, the differential application of intellectual demands would seem to be responsible for the results obtained on self concept in the current study.

There was a noticeable drop in positive ratings of the family in the laboratory school boys from junior to senior high level with a similar trend noted in the girls at that school. This change in perceived family interrelationships was also noted in the results obtained on attitudes and values. This disillusionment with the family was not found in the regular school gifted boys or girls and suggested that there are factors operating in the laboratory school which may contribute to a growing distance between student and parent. Such a change may be nothing more than early entrance to the adolescent rebellion stage. Further followup on this point would be useful.

Finally, it was encouraging to note that in both groups of girls there was a tendency to increase their rating of the value of creativity from the junior to senior high level. This result, as well as others, testified to the point that the greater social and materialistic values apparent in the regular school did not prevent the gifted girls from expressing their interests on this particular dimension.

The last refuge of the disgruntled investigator is usually to turn upon his measuring instruments and denounce them as inadequate to the job thus explaining away his lack of expected results. It is a sore temptation to do this with the Sentence Completion Test used in the present study. Although it remains, in this investigator's opinion, a fine tool to be used in individual clinical situations, in which important dimensions of the person's personality is sometimes revealed, it does not seem to be a useful tool in the type of group comparisons executed in the present study. The problems of obtaining reliable judges' ratings and the time consumed in scoring the tests did not seem to be justified by the results obtained.

Attitudes and Values

The major differences between the laboratory school and regular school groups centered in the dimensions of attitudes and values. In this regard, the regular school groups showed important similarities to Coleman's general description of the comprehensive high school students of his study. The greater interest of the regular school group in social affairs, the greater prestige of the athlete, and apparent greater emphasis on material possessions were a part of the perceived environment of the regular high school. These greater emphases were agreed upon by both boys and girls and at both junior and senior high school levels. In fact, the emphasis on these factors seemed to increase at the senior high level, as evidenced by the large number of differences between the groups at that stage.

The degree to which the laboratory school student is relatively freer from social pressures than was the regular school student can be indicated by their tendency to downgrade the importance of being "in with the important group" or to be part of a leading crowd. The gifted laboratory school girls at the junior high level stated that knowing a girl who is important will make you popular while

the regular school girls believe that dating a prestigeful boy will make you popular. This difference stressed the comparative lack of emphasis on heterosexual socialization in the laboratory school at the junior high level.

The greater emphasis on intellectual concerns in the laboratory school is not without its psychological cost. A significant minority of the laboratory school students believed that they were not doing well in school and found school itself an unpleasant experience.

Much of the initial predictions that the laboratory school students would be more interested in intellectually based activities while the regular school group would be more interested in social and athletic events, went almost entirely awry. There is one type of post hoc explanation that fits the data reasonably well. This explanation would portray the laboratory school student as surfeited with intellectual concerns and experiences while the gifted students in the regular school were still hungry for such experience. A wide variety of differences between the groups can be explained on the basis of this general conceptualization.

For example, the regular school students would use extra time in school to study more often than would the laboratory school students. The regular school students believed that one of the important things in college would be the stimulation of new ideas while the laboratory school students preferred to find friendly people to work with. The laboratory school students preferred such non-intellectual areas as shop and physical education more often than did the gifted students in the regular school, and the laboratory school boys seemed more interested in a successful career in business than in more intellectually oriented occupations or careers.

A further bench mark of the greater pressure placed on the laboratory school students for intellectual performance is revealed by the significantly larger amount of homework time demanded of them at the senior high level than of the regular school students. While the final outcome of such students in terms of career or life choice has to be postponed until the students mature the fact that 1/4 to 1/3 of the students in the laboratory school felt this pressure and seemed to react to it by avoidance of intellectual activities will no doubt be of concern to those responsible for their program.

Although the gifted students in the regular school program perceived a different social environment in which they existed, it should not be assumed that they accepted these values. Rather, there is some evidence that they did not accept them and instead maintained their own values apart from the predominate trends that they perceived in their secondary school. For example, one finds the gifted girls wishing to date a good student, being interested in intellectual occupations, and, significantly, wished to be remembered as a brilliant student in their high school. Each of these choices were made substantially more often than obtained from the high school girls in the Coleman study.

The recognition on the part of gifted students in the regular school that their own set of values runs contrary to general school norms can be seen in their answer to the question as to whether a boy has to go against his principles to be in with the leading crowd in school. The laboratory school students did not think that this compromise with principle was necessary, whereas the regular school students believed that it was. Furthermore, the gifted students were willing to buck this trend as evidenced in their report that they would accept their own values rather than bow to the group decision in the majority of instances. There is some evidence, however, that the gifted students were not completely immune to the differential social pressures in the regular school system.

As has been previously noted, there were differences in the groups in terms of the closeness of family relationships. Although significant differences were obtained infrequently between the laboratory and regular school groups, there was a sharp difference in the attitude towards the family between students at the junior high and senior high levels in the laboratory school population. In almost all of the items which dealt in the general area of family relationships, the laboratory school students appeared more negative or more estranged from their family at the senior high level. No such trend was found with the regular school students. Whether this downgrading of adults or the family may represent merely adolescent rebellion as noted previously; or whether it represents some other trend or influence affected by some variables in the school environment is hard to determine at this time.

The differences in school environments appeared to have little influence on the students' attitudes toward their academic subject areas. There is quite general consistency regarding the attitudes of both groups toward major subject fields. While there are some differences on the minor fields, it appeared more easily explained on the basis of individual instructors than upon the basic attitude differences in the groups. There was an interesting and unexplained difference marked by a strong, negative tinge in attitudes toward scientists and science among the laboratory school girls that was not reproduced in the girls in the regular school program. Other sex differences worth noting was the low esteem held by gifted boys in both settings for the subject area of English. Other more predictable results were the girls' preference for social studies over mathematics while the boys had opposite preferences.

A final word should be mentioned regarding the selection procedure itself around which much of the present investigation was built. Selecting populations by a table of random numbers does not guarantee that they, in fact, are similar.

It just makes this a highly likely possibility. The fact that some differences did occur, such as difference in level of father education with the junior high boys, shows how factors, presumably randomized, can in reality show differences. The results as summarized above, however, seem to form a rather consistent story regarding the influence of the two school environments. It is the burden of other investigators, therefore, to show that the variance shown here is due to sampling problems rather than the result of true differences in the school environment.

What is the answer then that should be given to those persons who seek a response to the question as to which is the better school environment for gifted students? It should be obvious that a study which catalogs the various differences in the gifted students in the two separate environments cannot, and should not be expected to, answer that value oriented question. It is further obvious that 'school goodness', like beauty, rests, to a considerable degree, in the eye of the beholder.

We must ask the questioner in turn, "What do you think is important in education?" If he can answer that question clearly, then the present study does offer some possible evidence to support or fail to support his own particular value system. Does he think a single minded emphasis on intellectual matters at the secondary school level is the best possible preparation for a later intellectual life and career? Then he might incline to the laboratory school as the environment in which such a goal can best be obtained. In doing so, he might reject some of the negative reactions involving the self concept of some students as either being unimportant, irrelevant, or not pertaining to the particular student he has in mind.

Does the questioner believe that the well-rounded personality is the major goal, and that the gifted student should be exposed to an environment that stresses social and athletic accomplishments, as well as that of the intellect? Then he should be more pleased with the results obtained by the regular school group. The same results that please certain persons must automatically displease others, because the value orientation of the persons asking the question, 'Which school is better' varies so dramatically.

From the value orientation of the investigator both settings had their advantages and disadvantages. The general unfriendly peer environment towards intellectually directed interests in the regular school places burdens of decision-making upon the gifted student who has to subscribe to peer values or lose peer status. A means needs to be found to avoid such unhappy choice making. The laboratory school's single dimension of success and status places a heavy burden of those students who cannot compete and who have no alternative road to excellence.

What can be said finally from the study is that there is evidence that the school environment <u>has</u> influenced some attitudes and orientations of the gifted student, although apparently influencing only minimally their cognitive abilities. These factors need to be kept in mind by educators, parents, and research persons. The more that we learn about these differences and their ultimate consequences, the better we will be able to plan intelligently for that type of environment that suits our own image of excellence in education for gifted students.

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